

ITEMS OF INTEREST.

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ORIGINAL COMMUNICATIONS.

MY FIRST EXPERIENCE WITH GAS.

Dr. C. C. Dills.

My first gas patient was Mr. W., a man of some importance, having accumulated considerable wealth in building railroads and turnpikes. But between the strain of such business, and handling foreign help, Mr. W.'s nerves failed him, and he lost his business grip. Several bad contracts turned the tide against him, and his fortune began to dwindle. He not only became melancholy, but made himself disagreeable to those with whom he came in contact.

In addition to all this, at the time I was called to see him, Mr. W. imagined he had about all the ills that flesh is heir to, and that nothing could help him. In my diagnosis I could only detect, aside from mental depression, a few functional derangements, and assured him the new remedy was just the thing for him.

With my first dose of the gas, I purposely avoided giving enough to make him laugh, but it made me laugh when, with the broad grin it produced he tried to look doleful, as he said it did him no good. I thought I saw my way then for doing him a good that he could not deny, and at my next visit I gave him such a dose that he laughed long and heartily.

As soon as the laugh subsided enough for him to answer, and while it was yet on him so he could not deny it, I asked what he thought of the remedy by this time? He replied, "That's a pretty good kind of stuff."

A month's treatment did the work, much to the relief of all concerned. Mr. W. not only recovered his normal condition, but became a special advocate of cheerfulness, often quoting:

"Mirth is the medicine of life,
It cures our ills, it calms our strife,
It gently smooths the brow of care,
And writes a thousand graces there."

My success with him created a general demand that I would get hold of "Old Crusty," who had never been known to laugh in his life.

A purse of \$50 was vouched for if I made him laugh. He passed my office regularly every day about noon, going down town, but how was I to secure him as a patient?

Old Crusty had the usual ailments of his class. He could never be caught free from complaints. He had cold feet, hands and limbs; had pains here, there and everywhere. He was also annoyed by ill-shapen sides; his right bulged out as if with an enlarged liver, his left as with an enlarged spleen. He was wizen-faced and narrow-chested, with a jaundiced complexion;

"Twisted, hunchback,
Limping, badly put up."

My ambition was aroused, and I at once commenced saluting him with unusual deference. It had its desired effect, and in time I had him in my office, as the spider had the fly.

I explained how the new remedy would warm him up and reduce his sides, inwardly laughing to think how the gas might split his sides. At least I fully made up my mind that there should be no question about the laugh, if I succeeded at all. Telling him that immediate exercise after inhaling the remedy was one of the requirements, and making sure of my way, I placed him near the door, gave the gas, and started him down town.

He did not laugh at once, evidently from want of practice; but I knew I could trust the gas. He had no sooner gotten fairly under way, when he commenced laughing, increasing as he went, till he reached the square where market was being held. Here he had to stop and hold in those abnormal sides, while he swayed backward and forward, laughing and laughing, till people congregated by the score, wondering what had happened to Crusty. The effect was tremendous, and the \$50 was cheerfully paid.

My next gas patient was old Uncle Billy M., with a case of rheumatism that confined him to his home and crutches. Uncle Billy was a jovial farmer, and laughed at the bare idea of taking laughing-gas. But I soberly explained that, in his case the only object was to infuse the enlivening properties of the gas, which would produce a perspiration much more beneficial than the hot baths usually resorted to for rheumatism. He little dreamed how I intended to make him literally leap and shout for joy.

After enough preliminary treatment to assure myself there was no physical incapacity for walking, the family was prepared for the grand *finale*. It was arranged that Uncle Billy should stand for the next dose, and, at my signal for a cue, some members of the family should commence dancing, while others secured the crutches and removed all the chairs from the room.

Everything went off according to program. Uncle Billy not only danced without his crutches under the gas, but kept on dancing and laughing after he got over it, to convince himself that the change was real. I kept up the treatment for a week or two, and there was no recurrence of the rheumatism while I remained in the place. Uncle Billy often said he believed that gas would almost make a man jump out of his grave, if it were introduced into his coffin.

Being younger then than now, I enjoyed many little episodes with the gas. Of these I will give but a single illustration, where I had the satisfaction of breaking up an auction of shoddy goods. By availing myself of a side alley for my apparatus, and raising a window sufficiently to insert a small rubber hose, I soon introduced enough gas to set every one laughing. The auctioneer himself, perhaps from his elevated position, became more affected than any of the others, laughing so he could not proceed at all, and thus had to dismiss his audience.

He was a badly-puzzled man, and kept saying at his hotel that it was the queerest thing to him why everybody kept up such laughter when there was nothing to laugh at. He said, though his sale was stopped he could not blame anybody, for he was the worst to laugh of the entire lot. One or two, only, suspected that I was at the bottom of the affair, but the poor auctioneer, who died shortly after, never knew what made him laugh so.

AN IDEAL STYPTIC.

This ideal styptic was lately discovered by Dr. Roswell Park, of the University of Buffalo.

I had occasion to use the formula myself, a few days ago, in an alarming case of hemorrhage following extraction. The blood flowed copiously in spite of very hot water, and then of Monsel's solution, followed in time by other styptics. When they had all failed I thought of this new preparation, and making some according to directions, had the extreme pleasure of seeing the bleeding stop almost instantly.

It is this success that has prompted me to speak of its value in the hope that it will always render like service.

The announcement of its discovery was first made in the *Medical News* of November 19th, 1895. In his paper of that date Dr. Park says:

My present object is to call attention to the combination of antipyrin and tannic acid in solution, by which there is precipitated an intensely agglutinative and cohesive substance, of, to me, unknown chemic composition, which offers the most ideal styptic that I ever dreamed of. This combination I hit on by accident, and first resorted to in an apparently intractable hemorrhage from removal of adenoid tissue in the vault of the pharynx.

Further on he speaks of the incidents attending its discovery, and finally waxes quite enthusiastic on its wide range of adaptability, and calls on all surgeons to give it a fair trial in solutions of different strength.

The proportion of each styptic used is variable, but the strongest effect is produced by the addition of antipyrin (powder) to the officinal solution of tannic acid in sufficient quantity to produce the characteristic gummy mass.

By having on hand a solution of each styptic any amount of the material may be produced of any strength.

It may be applied to the tooth socket by a small piece of sponge well impregnated in the material and forced into place.

This discovery is undoubtedly a most important one, and all dentists should give it a fair trial to more quickly establish its merit and give it the place in the list of therapeutical agents which it seems to deserve.

H. J. Allen, D.D.S.

TOOTH DISINTEGRATION UNDER GOLD CROWN.

Two years ago I cut down two perfectly sound teeth (sound as I ever saw), *viz.*, inferior canine and second molar, and made gold crown for each, to which I attached three teeth, two bicuspid and one molar, making a five-tooth bridge including caps, which was worn with entire comfort till about four months ago, the patient then noticing that it felt uneasy but refrained from consulting me till last week. On examination I found the bridge fastened tight to the molar end and loose at the canines, and I supposed, before removing, that the cement had just broken loose. On removal I found the canine soft and spongy, which I pushed off with my thumb, leaving the root only a short distance above the alveolus and much below the gum. I found the nerve vital and healthy, which I devitalized. The patient is a man over 80 years of age, healthy, free from medicine, and other teeth hard and flinty.

The crown that covered the canine was close fitting and extended well under the gum. Cement under some had softened, but

most of it remained, and under the molar it was as good as the day it was inserted. I never saw a case of such complete disintegration of tooth substance under a gold crown in so short a time before, and I wish to ask if it is common or rare, and if acid in cement could have caused it, and if so, why didn't it soften the molar, as same cement was used for both and of same mix?

In repairing this case I oxidized the root, enlarged the pulp canal, inserted strong post, fitted gold band to root and cemented it on, leaving the end open, thereby restoring the tooth to its original shape and replaced the bridge over this artificial abutment.

H. L. Harlan, Lexington, Ky.

SURGERY WITHOUT PAIN.

The meeting of the Philadelphia County Medical Society was rendered particularly interesting on account of the presentation of a paper by Dr. T. Pervin on the new method of abolishing the pain of surgical operations without the necessity of employing ether or chloroform. This is the system suggested and practiced by the well-known German surgeon, Schleich, who, by its use, has been able to perform practically all of the minor and many of the major operations of surgery without pain to the patient and without depriving him in any other way of his consciousness.

By the method of Schleich there are prepared three solutions of common salt, in which are dissolved different quantities of muriate of cocain and morphia. The part to be operated on is thoroughly cleansed with an antiseptic solution, and the surface brought to a low temperature by a spray of chlorid of ethyl. Into this area of the skin, which by the action of the spray has been deprived of all sensation, the salt solution containing the cocain and morphia is injected by means of a special hypodermic syringe, numerous punctures being made in all directions. This renders the deeper structures insensible to the surgeon's knife, and for a period of from twenty minutes to half an hour the patient is not conscious, so far as actual pain is concerned, of extensive cutting and sewing.

The new method differs in an important degree from the ordinary employment of hypodermic injections of cocain. The strength of the drug which has been used in the past is about 1 part in each 25 parts of the solution, while in the Schleich method there is often employed a strength of only 1 in 10,000. In the former,

however, only a few drops of the solution are employed, while in the latter the tissues surrounding the part to be operated on are thoroughly infiltrated with the solution. With the small quantity of the cocain employed by Dr. Schleich, it is apparent that something more than cocain is responsible for the local anesthesia so perfectly obtained. In the opinion of Drs. Keen, Ashhurst and Morton, who discussed the merits of the new system, the infiltration of the tissues with the solution and the distension of nerves were responsible in a large measure for the absence of pain when the incision by the knife is made.

To indicate the manner of employing the method of Schleich, and to show the entire absence of pain, one of the surgeons had the solution inserted beneath the skin of his arm and an incision an inch long made and sewed up before the society.

In the discussion it was generally conceded, both from the results achieved by the German surgeon and the experiments made in this city, that a decided advance has been made in the field of anesthetics, and that for a large number of operations the infiltration method would entirely supersede the general anesthesia by ether and chloroform.

In answer to the question for a remedy for rocking or tilting upper plates, or for lower, it has been my good fortune to never have to make over but two or three plates in my life on account of this trouble. My failures were not due to faulty impressions, nor methods of taking them, but to the changing condition of the mouth, in part, and to packing the case too full, and so having to use too much force in bringing the flask together, and possibly in one case, to cooling too rapidly. My uniform success is due to the force used in pushing the impression tray and plaster firmly to the mouth. Plaster hardens at the bottom or next to the tray first, and for this reason, when placed in the mouth at the right time, a firm, strong pressure can be used and maintained without forcing too much of the plaster out of the tray, and till the plaster is well hardened. Thus pushing against the soft parts of the mouth just the same as the plate will when it has a well-formed air-chamber and a good, strong suction. During the past year I have used, exclusively, modeling composition in the common plaster tray for taking lower impressions, and allowing it to get well hardened before withdrawing, and with excellent results.

A. C. Green.

DENTAL WAXED FLOSS SILK.

In addition to the use of a suitable tooth-brush and tooth-powder on the teeth, there is no practice which commends itself so highly as the use of this article. It will take the average person some time to become expert in handling it, but when this is attained, it will be acknowledged the best "tooth-pick" and beautifier of the teeth in the world.

Directions for Using.—Cut off from the spool a piece of silk about fifteen inches long, which thoroughly wax. With the thumbs and forefingers carry the waxed floss silk into each space between the teeth, the remaining three fingers of each hand being used to hold on to the ends of the silk firmly. The thumbs and forefingers of each hand as they hold the silk, should be kept but a very little further apart than the width of the teeth between which the silk is to be passed. Thorough tension of the silk must be kept up at all times. For the eight teeth on the left side of the upper jaw, pass the silk over the end of the left hand thumb, and over the end of the right hand forefinger. Thus, the palm of the right hand, and the back of the thumb of the left hand will be toward the face. Hold firmly, slide it between the teeth with a gliding motion; carry it well down between the necks of the teeth and the free edges of the gums, but not in such a manner as to wound the latter, the pressure being properly brought against the teeth, not against the gums. Before sliding the silk from between the teeth, the silk may be rapidly drawn backward and forward on the necks of the teeth, thus polishing and preserving these surfaces, and "raking out" any deposits of food or incipient tartar which may be there. The silk should be slid from between the teeth with the same tension as when it is introduced between them, otherwise it will tear when the teeth are very close together. If this rule be observed, and the silk still tears, it indicates one of several conditions: a cavity of decay; a scale of tartar; or a sharp point or jagged edge of the tooth, any of which conditions should be corrected.

The younger dentists of the city of Louisville are giving a good example of enterprise. They have formed themselves into a society, and meet once a month for reading of papers and general discussion. This is sure to be of benefit, and should be a stimulous for others to do likewise.

GUTTA-PERCHA FILLINGS.

EDITOR ITEMS:—In your January number, among "Practical Points," appeared an article over my signature, entitled "Gutta-percha filling," which, for the purpose of those who wish to be very particular with their work, or those who have had less experience with this material, might have been more explicit. I said trim or finish as for gold. I did not mean, of course, with files, tapes, etc. I only wished to emphasize the importance of trimming well to the margin of the cavity. Why? Because gutta-percha never shrinks; on the contrary, it almost invariably has a tendency to swell out, thus more liable to be dislodged with floss or pick. In buccal cavities of lower molars, especially is this the case, consequently more liable to be picked or brushed out, unless when used in "shot hole" cavities, so-called by Dr. Flagg, who, by the way, considers these cavities and the locality especially favorable to gutta-percha work. *J. L. Davenport.*

Many times I have had patients for whom others, in attempting to "kill the nerve" of a tooth, had killed the gum and alveolar process between the teeth, by the bungling manner in which the nerve paste had been applied. This is not a strange result if it is applied on a pellet of cotton as usually directed by writers. And then to complete the proof of their ignorance, they neglect to assist nature by removing the piece of dead bone from between the teeth while continuing to treat the teeth and gums to relieve the inflammation for which they alone are responsible.

The arsenical paste should be carried to the exposed pulp on the point of any slender instrument, without cotton, thus enabling you to see that it goes exactly where it is wanted. Then securely cover it, being careful not to crowd it from the cavity on to the gum; and it is well to remember that it does not require as much arsenic to kill a pulp as it does a man.

D. S. Thomas, Somerset, Ohio.

FILLING CHILDREN'S TEETH.—I have been in the habit of filling children's teeth with cement and gutta-percha, and filling them over and over again. But lately I have got in the way of using slow-setting cement, and then veneering with amalgam on the surface. *Dr. Ainsworth.*

OPINIONS ABOUT LISTERIN.

Dr. Frank Abbott says : I have used listerin for several years, to quite an extent, in all diseases about the mouth where an antiseptic is indicated. The result has been as good as is obtained from other antiseptics, with greater advantages on account of its pleasant taste and smell.

Dr. T. H. Chandler : My experience with listerin justifies me in saying that as a mouth wash for the dressing table, in a weak solution, it seems excellent ; as a gargle for ordinary sore throat, and for incipient canker spots, it has proved good in stronger doses ; for removing the odor of fetid pulps, in full strength, I find it a success.

C. E. Francis : The more I use listerin the better I like it, and this I report after prolonged trial. It is excellent to apply to diseased gums, for injecting root canals and for bathing cavities preparatory to filling. In a recent case of incipient tonsillitis, a spray of listerin from a Shurtleff atomizer worked like magic. In a case of abscess of the ear, which for several months had been treated with injections of carbolic acid, borate of soda and chlorinated soda, with scarcely any benefit, a few injections of listerin dissipated the trouble in a brief time.

Six years later.—What I formerly stated in regard to the efficacy of listerin has been fully confirmed by later experience. It has now become an indispensable agent in my practice. As a mouth wash for every day use it surpasses anything I have ever found for the purpose, and my patients have learned how to appreciate it. It is particularly valuable in cases of pyorrhea, and where faithfully used will do much toward staying the progress of this annoying disease.

C. T. Stockwell, D.D.S.: * * * The claim is made for listerin that it is a reliable antiseptic and non-toxic, therefore absolutely safe, even if used in full strength—internally or externally. Since the conviction has grown on the profession that carbolic acid may be open to grave objections, the need has become seriously felt for a reliable antiseptic remedy that should be free from any toxic influence. Listerin is endorsed by a very large number of the best medical and scientific authorities as efficient and safe.

We have used it for nearly a year past, and freely say that we should very much dislike to be without it. It has a very

agreeable odor, makes a pleasant and efficient mouth wash, is excellent for injecting pockets formed by pyorrhea alveolaris, or infectious alveolitis, preferable in many cases to carbolic acid in the treatment of "dead" teeth and alveolar abscesses, inasmuch as it does not coagulate albumen, deodorizes the breath, and imparts a cool and agreeable sensation to the mucous membrane of the mouth, and, in short, seems to satisfactorily meet the demand for a non-irritating and non-toxic antiseptic. For dental purposes it should, in our judgment, largely take the place of carbolic acid; it is certainly very much more agreeable to both patient and operator. We sincerely hope the profession generally will subject this preparation to a careful test.—*April, 1884.*

Six years' further use of listerin does not suggest my retraction from the above.—*June, 1890.*

Dr. C. N. Peirce: I have no hesitation in stating that the results I have obtained from the use of listerin have satisfied me of its value in general dental practice. In its influence in the disease known as pyorrhea, the mouth is kept in a pure condition and the irritation in the gums modified by its use. I have also used it where the gums presented a granulated appearance, and have found it very beneficial.

Prof. Ferdinand J. S. Gorgas: * * * Listerin is largely employed as an antiseptic, deodorizer and disinfectant in surgical practice in the form of a lotion, a gargle, a dressing or an injection. In dental practice, listerin is reliable in carious teeth, ulcerations of the mucous membrane and wounds of the mouth, in the form of a lotion or dressing; for alveolar abscesses in the form of an injection; after the extraction of teeth as a mouth wash, and for an offensive breath as a gargle.

It may be employed in its full strength, or in various degrees of dilution with water.

There is evidently a material advancement among dentists and in dentistry. Whoever has the fortune to visit the profession in various sections will see it in a marked degree. There are many still asleep, but the majority are waking up. They look better, walk in better society and are in better condition. They are more intelligent, have better offices and do better work. The community respects them more highly; they have more influence among men and are more useful citizens. They have a greater breadth of views, are better rounded in character and education, and have a higher morality.

CURRENT THOUGHTS.

THE OFFICE AND ECCENTRICITIES OF THE DENTAL PULP.

Dr. D. D. Smith, Philadelphia.

The different formations which make up the body of the tooth receive light and nourishment from two sources: from the pulp and from the pericementum of the root. The full appreciation of this fact and the phenomena arising from it will greatly assist in establishing substantial and rational methods for saving the teeth. The pulp of the tooth is the central figure and the important factor in the tooth. To it is committed the care of the newly-erupted tooth, and its first work is to readjust, recalcify, consolidate and strengthen and sustain the enamel and dentin. As a rule, the earlier a tooth is developed the more easily it yields to decay. The more time taken for calcification before eruption the greater the resistance to decay. The young teeth are frequently erupted into environments which are very unfavorable to their development, and there begins at once a ceaseless contention between the forces acting externally to destroy it and the vital forces of the pulp to protect it from within. Just in proportion as the pulp is able to do its work of nourishing, consolidating, and maintaining the osseous parts, will the crown at this period be protected from decay. Hence the emphasis that should be placed on keeping the pulps of young teeth in healthful activity.

A knowledge among the people of the law of use governing tooth consolidation would do more to arrest the extensive decay now prevalent between eight and fifteen years of age than dentistry can ever hope to accomplish by mechanical means. Too much importance is attached to inheritance as determining the character of teeth. Use of the teeth in mastication, and thorough cleanliness will produce that exercise required by the pulp and peridontium. The sixth-year molar, which erupts at a period when little thought or care is given to the teeth, is commonly the one over which the hardest battle for preservation is fought. The effort should be to save it, but with a living pulp. Devitalization of the pulp at an early period of life carries with it retrogressive change in the quality of the tooth-material. Fillings may prolong the existence of a tooth as such, but with the arrest of vitality in the tooth there is cessation of all vital sustaining action. The imperfectly calcified enamel and dentin built into the tooth are

now in contact with devitalized connective tissue, which in the imperfectly consolidated tooth becomes a source of disintegration and assists in its destruction. The pulp is to the erupted tooth, whether temporary or permanent, the only source of life and sustenance, and it is of the first importance that it be maintained in a condition of health. All encroachments on it through decay or manipulation should be carefully guarded against. So important is this that no effort should be spared to protect it from the progress of decay and injury. Its preservation in full activity means the deposition of better material, though parts of the crown may have been cut away. It has been said that the pulp is the only medium through which the dentin and enamel of a tooth are changed. It seems more than probable that the future may discover that the action is not confined to enamel and dentin alone, but that it extends into the cementum, exciting changes whereby true bone-structure is converted into a tissue resembling dentin more than cementum. Though a tooth may be fragile and imperfect at eruption, if you get it into a condition of use and cleanliness and the pulp is protected, the pulp will build up the tooth into an organ of good use. Instances of such cases are in the minds of all men of experience and observation. But we usually consider those cases exceptional rather than true expressions of the law of pulp action. Are not our literature and the teachings wanting in that a position of supreme importance is given to operations on the external part of the tooth, while overlooking the important factor within the walls of the pulp-cavity?

What shall we do for the teeth of the poor? It is not strange that the question is asked, when we look abroad and see the condition of the mouths of a large percentage of the community. There is one work which, it seems to me, devolves on the profession, and which can be undertaken in its incipiency, and that is to emphasize education. Go into our public schools to-day, and ninety-seven per cent of all the scholars that you find there will be suffering with troubles of the teeth, much of which might be obviated by emphasizing just this single point, by forcing instruction into our public schools, by compelling the children to come to school with clean mouths, as they are required to come with clean faces. An influence might go out from dentistry into the community which shall reach to the lowest dregs by educating them to the importance of their teeth and the importance of pulp action, so the tooth can be erupted into proper environments.

Does there ever come to a tooth a period in life when the pulp, with all the importance attaching to it in early life can be dis-

pensed with? A pulp which has maintained a healthful existence in a tooth for twenty-five or thirty-five years has accomplished for that tooth all that it will or can do in the way of strengthening its osseous structure. The maximum of use is reached with full maturity. Before this the pulp forms part of the tooth; afterward it can be dispensed with. If it remain within the tooth, there is an unmistakable restriction of its function and limiting of its activity, and sometimes there seems to be interference with the usefulness of the tooth. Having completed its work of consolidating the structures, it will sometimes commence to build in on itself, circumscribing its boundaries, or depositing nodules of dentin or enamel, or pulp-stones, sometimes ossifying the whole coronal portion, and sometimes mummifying the entire substance by injecting into the tubuli an offensive coloring-matter, which baffles all efforts for its removal. Later in life we find teeth which have been decay-resisting for fifty or sixty years seemingly changing in structure, returning again to the conditions of childhood, as evinced by their yielding more readily to decay. Continuing on a little further, a few years more perhaps, it is not uncommon to find that decay has become extensive throughout the remaining teeth, along the gum margin particularly of the front teeth, where fillings have preserved them for twenty years or more; the teeth begin to deteriorate, and we find a change in the structure. The tooth has softened. If refilled, after a short time they begin to darken around the surface. The fillings will no longer arrest decay, as they have previously done. What has brought about this change? Is it not the pulp that previously rebuilt and consolidated the osseous structure of the crown—the same pulp again at work, but now transforming the compact material which it built in that tooth into a condition wherein it yields much more easily to decay? What are the practical deductions from this action of the pulp? Suppose we take a tooth at the period of life when it is at its best, when the dentin and enamel are strongly consolidated, and destroy the pulp. What is the result? By no vital process can there be later in life any change of the compacted material of the dentin and enamel into any better or poorer formation. As the tooth is when the pulp is destroyed so it must remain, except as to those changes which take place through the gradual disintegration of the internal structures of all pulpless teeth. Have we injured the tooth in any material degree? What is the prognosis of a tooth with pulp destroyed at the period of maximum consolidation? With present methods of treatment, who would venture the prediction that a pulpless tooth would not

continue in service to the end? If the pulp is so important at one period of life, and of little importance at another; if it is indeed a builder in early life and a source of disintegration in old age, shall we not revise our estimates of the value of the dental pulp?

It has been said that the future may demonstrate as a fact what is now a conjecture—that the action of the pulp in rebuilding the osseous structures of the tooth is not confined in its operations to dentin and enamel, but extends an influence into the territory of the cementum, depriving it of much of the characteristics of true bone-structure. If this be so, there comes a suggestion respecting some of the unexplained manifestations of pyorrhea. Pyorrhea is seldom found in connection with young teeth. It seems to be a disease of adult life, generally of middle life. It is an affection not found in connection with soft teeth, nor with teeth much given to decay. So true is this, that in typical cases of pyorrhea there is no decay in the teeth. It is never found in connection with devitalized teeth, where devitalization preceded the manifestation of the disease. In a mouth with extensive and uncontrollable pyorrhea, it will be noticed that the disease is confined to the strong, well-formed teeth exempt from decay, not necessarily unfilled, but to teeth with living pulps. Our deductions therefore are these: If it should hereafter be found that the pulp sends a consolidating tendency or influence into the territory of the cementum, rendering it obnoxious to the pericementum because of too great consolidation, there will be found favorable conditions for the beginning of pyorrhea, and we shall find in it the probable solution of the exemption of pulpless teeth from pyorrhea. We shall also find why soft and young teeth are not affected, and why it is preëminently a disease associated with the hard, strong teeth of adult life. It is of vital importance that the cementum should be kept unimpaired and unchanged. It is of little consequence what becomes of the pulp in a mature tooth. If the cementum is in a normal condition, it can be restored.

International.

WATER MOTORS.—Just twenty-two years ago this day we started running in our office a small water motor wheel for our dental engine. We do not remember its make, and it only bears the name of the agents, Sawyer & Wilson, agents for the Pacific Coast. It has been in constant use all that time, only requiring one new shaft. Can any one beat that?

L. S. Skiff & Co., Salem, Oregon.

TREATING AN ABSCESS AND PUTRESCENT PULPS.

Dr. Harlan.

The principal difficulty in the treatment of pulpless teeth is from the infection of the territory beyond the apex of the root. I think probably more trouble arises from careless or unskilful handling of the contents of the canal than anything else. The disease, of course, is not within the tooth, but it is beyond the apex of the tooth, and while it is perfectly reasonable to suppose that a good many teeth containing putrescent pulps may be filled immediately, yet there are a good many where that would cause considerable after-suffering to the patient. I long ago came to the conclusion that you could not call a case successful because a fistula was not established within two or three years after the filling because many times, after five years, or six, or eight, or ten years, there will be a fistula established as a result of the incomplete sterilization of the infected dentine, even when the root of the tooth is well filled.

If you dilute the stronger liquid ammonia till it is about $\frac{1}{2}$ of 1 per cent and thoroughly wash root canals with that and then dry the roots, you will find that the root is in one of the best conditions for the reception of a dressing, whether it is a non-coagulant or coagulant. This, I think, is probably better than the silico-fluorid of sodium, which is a very penetrating alkalin fluid. With a $\frac{1}{2}$ per cent solution it is not irritating, and it is a very powerful cleanser. I would like to have some of you try that and see the result. You will find also just prior to the introduction of a root-filling of gutta-percha, for instance, that if you wash the root canals with the ammonia water solution, dry the roots and then introduce the oil, if it is cassia, or eucalyptus, or myrtol, you will find that the root-filling clings better to the sides of the canal than when washed with almost anything else that I know of. Of course, a microscopical examination of the teeth would be necessary to show that the gutta-percha did cling to the sides better than after washing with alcohol or chloroform, but I believe from clinical experience—this is not scientific—but I say from clinical experience, the ammonia washing is better than anything I have ever used. Ordinary abscesses have to be treated with patience, care and fidelity, and they get well. I expect that one-quarter of the income of nearly all dentists comes from the handling of pulpless teeth ; consequently it should receive very great attention. I

am sure that a quarter of my income arises from the handling of pulpless teeth, and it has for years. So I would simply say that if it requires two hours or three hours to thoroughly cleanse the root of a tooth, it is time well spent. I don't mind telling you that within the past two months I have spent ten hours on one tooth, in order to get through the root. But I succeeded, and somebody had introduced a piece of wood into the root of the tooth, and I had to work, and work, and work—and in the other root there was amalgam. But I finally succeeded.

Now, to branch off a little from the subject of the treatment of putrescent pulp-canals. You don't know how thoroughly well you fill the roots of teeth till you fill quite a number out of the mouth. I believe that I can fill the roots of a tooth just as well in the mouth, perhaps better generally, than I can out of the mouth; but it requires much practice to be certain that all the foreign matters are removed from the roots of the teeth before you try to fill the teeth, and that is where a great many failures come from, by leaving small portions of the pulp or other foreign substances in the root. To illustrate, about two weeks ago a gentleman in another city referred a very prominent personage to me who had had the pulp die in a bicuspid tooth. He had a picture on his card, showing that the two roots had been opened and that somebody had drilled a hole through the side of the tooth, and he had this very well diagramed. Now this tooth had been opened by a dentist in New York after the pulp died. That relieved him of the pain. A dentist in Georgia had treated this tooth for some little time during the summer, kept it quiet, and then the patient had gone to my friend, the other dentist. Passing through the hands of all three of these men, and all of them competent men, and finally coming to me, I discovered that not one of them had sufficiently well opened the entrance to the root canals to remove the body of the pulp, which was still in the pulp chamber, and I, in accordance with my usual custom, had adjusted the rubber-dam over this tooth and the adjacent tooth, when I said, "This tooth must be opened better." I did open it and took out the remains of the pulp, and took out a portion of the remains from one of the roots. The tooth had been opened in August and it came to me in October. Now the reason why they did not get this abscess cured was because they had not made the way open. If you do not thoroughly open the cavity or make a sufficiently large opening when you drill through the filling in a tooth, you are very apt to have a failure from that insufficient preparation, and, therefore, above everything else, avoid that.

CAPPING PULPS.

Dr. Gordon White, Nashville, Tenn.

A number of years ago I began the use of chloro-percha in the filling of pulp canals. A few years later some one suggested the addition of aristol to the chloroform before dissolving the gutta-percha. This proved so satisfactory, and seemed to produce so little irritation, even when it penetrated the apical foramen, that it was decided to make some experiments in its use for capping pulps.

About four years ago my attention was called to the fact that I was rarely having any annoyance whatever from capped pulps; and though I had been trying this material for some time, it was, I regret to say, without system. At this time the operation was conducted as a systematic procedure and with a watchful eye.

Before the operation is commenced, the patient rinses the mouth with as warm water as can be used comfortably, to which is added a little alcohol or a few drops of some of the antiseptics. The cavity is then washed with warm water from the syringe, and the excavation begun in the usual way. Occasionally, or as required, the cavity is wiped with a small pledget of cotton saturated with chloroform. When it is prepared for the capping, with a small pair of scissors and foil-pliers, they having been sterilized with hot water, a small piece of paper from a prescription blank is cut to fit proximately the point to be capped, or the entire bottom of the cavity, if preferred. This paper cap is dipped into chloroform, which, of course, quickly evaporates, leaving it with its original stiffness and, for this purpose, sufficiently sterilized. On one side of the piece of paper, with a small pointed instrument, sterilized of course, place the smallest particle of the chloro-percha solution in which has been dissolved fifty grains of aristol to the ounce of chloroform. This forms a little plaster. The cavity having been previously wiped out with chloroform, which leaves it dry, this little plaster is turned on to the exposure and gently pressed into position with the smallest piece of spunk.

On this cap are now thrown a few draughts of hot air, which soon evaporates the chloroform from the paste, leaving the cap rather securely stuck to its position. Over this is placed a little thin cement, and, when hard, over this cement capping is inserted whatever filling is desired.

During these four years I have capped, by this operation, more than a hundred pulps, and up to the present have been able

to record only five failures. Two of the cases I had no hope of saving, for they had given trouble for three months ; but so successful had the operation generally been, I took the risk of making the experiment. Two others had also ached, but there seemed to be almost no inflammation. The last was that of an upper molar in which developed a pulp-stone, and which of course necessitated the removal of the pulp.

I am persuaded that in the field of dental operations the capping of the dental pulp is as successful, properly performed, as the average dental operation. In my practice I have tried every plan which came to my knowledge, as well as many original experiments ; but from no other process have I had such results. Capped pulps do live. Within the past few days I have seen a molar whose pulp I capped fourteen years ago, and it had every sensation of a normal tooth. In 1883 I performed the operation on a bicuspid, for our friend Dr. Noel. The tooth had caused him some uneasiness, and when the leathery disk of decalcified dentin was lifted from the bottom of the cavity, the pulp was found exposed and bleeding. The doctor is with us, and can testify to the present condition of the tooth.

Cosmos.

FILLING AT THE CERVICAL BORDER.

Dr. Louis Ottofy, Chicago.

The material which I wish to recommend, and which in my hands has met with the most favorable results, is the well known combination of tin and gold. One sheet of tin carefully folded within one sheet of No. 4 non-cohesive foil.

I well remember the difficulties I first met with in trying to use tin and gold, and I am satisfied that its use is abandoned by many because of a lack of persistence in overcoming these difficulties. In the first place the tin should be folded carefully within the gold, so that when it is cut up no tin is visible. In introducing it into the cavity, the pieces should be large enough to fit the floor or seat of the cavity, and not so large as to be crumpled up in their introduction. A very large plugger, coarsely serrated, is best adapted for condensation ; the material should merely be pressed into place and not packed, in the sense in which gold is packed into a cavity. Care should be taken not to injure the gold and thus expose the tin, but have gold come in contact with gold as much as possible. Gradually pieces of non-cohesive gold should be added, followed by semi-cohesive and finally cohesive.

One of the advantages of tin and gold lies in the fact that it can be used under moisture; it is not well to use any material under moisture, but when the circumstances compel us to do so, I know of no material which can be worked so favorably as the combination of tin and gold.

Another advantage is that it does not require as close condensation as anything else we could use. I am not certain what reason is assigned for this, but probably the fact that the exposed tin oxidizes, and we have the material when porous, increased in quantity by the formation of this oxid, accounts for it. This oxidation, furthermore, is claimed to be of some therapeutic value. Whether that is true or not, any one who has removed tin and gold, will have seldom found the surface formerly in contact with tin and gold attacked by caries.

This covers the subject of protecting the border on account of its vulnerable location. But aside from this, failure is also due to the difficulty of properly preparing and then reaching all parts of the prepared cavity. I cannot recall any more perplexing operation than that of faithfully following up the white or chalky lines, which adjoin the margins of proximal cavities proper. It is needless to say that half the battle is won when these chalk lines have been followed up and prepared, and the other half is won when they have been properly protected. Save tooth structure whenever you can, but cut fearlessly when trailing after chalk lines, is a good rule to observe.

Finally, the cervical border is never properly protected unless the final finishing of the filling or shaping of the tooth is accomplished on true mechanical and physiological principles. By the mechanical principles I mean that the seat of the cavity should be ample so as not to put too much strain on the border itself, for that requires protection, and a surface requiring protection is not usually fit to give support. By the physiological principles I mean the preservation of the normal interdental spaces, and this usually demands a restoration of the contour of the tooth, so as to secure as good a self-cleansing space as possible: *Dental Review.*

If we wait for patients to tell us our faults before we remedy them, we shall probably wait too long to have it do us much good. If our patients are not pleased, and specially if they are displeased, they will simply bid us good-bye. It is the absence of another call that is significant.

IMPLANTATION.

Dr. Younger : So far, my first cases are all intact. The first case I had was a young maiden, an Italian. This, to my surprise, remained in eighteen months. All her friends came up and shook the tooth and found it had become as firm as the others.

My next case was the 17th of August, succeeding. I planted five teeth, two of them on that day, the 17th, one a week later, one about the 1st of December, and the fifth one, a molar, in the year following. So that leaves four teeth that have been in four years, one over ten years, and one ten years about the first of next August, and they are all in perfect condition. A year or two ago, Dr. Daboll, of Paris, saw them, and he could not determine the teeth, or distinguish these from the original teeth.

There are quite a number of other cases that are from nine to ten years of age that are in excellent condition.

A week or so before I left, a lady visited my office and complained that the one I planted nine years ago was loose. I examined it and found what I supposed was a case of resorption of the root, so I made an appointment, and prepared a tooth for a case of transplantation ; when I started in to remove it I found to my surprise a solid tooth. The one that had been planted nine years last April was in perfect condition. This shows that the operation is a permanent one ; that is, if an operation will last ten years, you may look on it as permanent. It promises in the case I have mentioned to last a lifetime, because there is nothing to indicate in appearance that there has been any absorption at all.

I would like to ask Dr. Jack how he makes his incision, because I think that is important in securing an artistic effect ?

Dr. Jack : I generally make the incision with the circular knife.

Dr. Younger : In case there would be much absorption, that will give an unartistic appearance. I would like to show how I perform the operation to get an artistic result.

A lady went to New York for whom I planted four teeth. I sent her to a gentleman there who had performed this work a great deal and who makes a specialty of it, and I followed in three weeks. He said, "How do you do it? These teeth have been in six weeks, and I couldn't tell which of them you had planted." I said, "The thing ought to be done artistically." We want to resemble the teeth that grew there, otherwise I do not consider it artistic.

The majority of the profession look on it as a thing to be dreaded. After the tooth has been thoroughly cleansed and all the substance removed, it is incapable of carrying infection. The only bacteria we have to dread is what is known as surgical bacteria. We don't care for the tubercular or syphilitic bacteria. Before performing the operation the mouth should be thoroughly sterilized, even the tissues underneath the gum, with a delicate syringe, and the person should gargle his throat; if possible, make the territory of the operation perfectly inhospitable to pathogenic germs; then, of course, the instruments should be sterilized; the hands should be thoroughly sterilized, and the finger-nails especially, to see that there is no dirt; remove this with soap and hot water and then sterilize them. With all these precautions it is impossible for bacteria to infect the parts. Then, after the operation, every two hours the patient should sterilize her mouth, and it should be kept antiseptic as long as the wound is open. I think it is due to these precautions that I have met with so much success.

The doctor then proceeded to illustrate his operation by black-board drawings, explaining the cuts as he made them.

Dr. Darby: Do you inject cocain into the gum, or etherize the patient?

Dr. Younger: I inject cocain.

Dr. Darby: I want to bear testimony to four teeth I saw in a mouth that Dr. Younger planted at least eight years ago. There were two centrals and two bicuspid, and had been in eight years. With one of the centrals resorption had taken place, and I was forced to replant another tooth in its place. His remarks in regard to artistic appearance I can fully verify; the appearance was certainly beautiful, and there was no recession of the gum present.

Dr. Younger: A gentleman in the Confederate service, who had in a charge lost three centrals and a lateral, came to me for advice five years ago. He had no alveolus except at the very end of the root. In this same gentleman one of the laterals I implanted had two failures; with the third I had excellent success.

I had a case where a lady came to me to have a tooth implanted, a right superior bicuspid; this was nine years ago, and I defy any dentist to select that tooth by observation or by resonance. She had one tooth out, the second superior bicuspid, and another one was diseased at the root, and she decided to have that one out and one implanted, and I performed this operation four times before I succeeded.

Dr. Darby: What do you think is the form of attachment between the tooth and the alveolus?

Dr. Younger: I think there is a great deal of what I understand to be physiological tissue and pericementum.

The doctor was asked, How long do you leave your appliances on before you consider it a success or failure?

Dr. Younger: In the course of a month or two months, if the tooth does not take hold, I take it out and put in another. If there is no attachment, of course it is a failure; if there is attachment to the gum and the tooth simply remains loose, I consider that a success.

Dr. Deane: I want to bear testimony to a few of the cases that Dr. Jack kindly invited me to his office to see, and one point that struck me is his method of retaining the tooth in the mouth. It would seem almost impossible for him to fail with the retaining fixture in place. I saw one where he had just removed the fixture, and it was impossible to produce any movement of the tooth, and that was one in which considerable pyorrhea had existed. An additional cause of trouble was that pyorrhea extended throughout the mouth, and yet this tooth was immovable and thoroughly resonant; I could not tell which tooth had been implanted.

Dr. McQuillan: Dr. Jack kindly sent one of his patients over to me, and I was delighted with the result; particularly in one where there had been considerable pyorrhea.

Dr. Jack: When I secure suitable teeth, I preserve them in a mixture of glycerin and water, equal parts, to keep them moist.

International.

ENGLISH SCHOOLS.—Our English brethren are rapidly rising to the level of the "inferior" American schools. Some of them have recently commenced the teaching of mechanical dentistry, and have opened laboratories with competent demonstrators in charge. Heretofore they have depended for instruction in this basal department of dental teaching on a system of apprenticeship of students to practicing dentists, and two years of this indentured life formed the half of their four years' course. Imagine a recognized American college accepting the laboratory training of any average, irresponsible practitioner, as a part of its college curriculum. We believe in responsible teaching for every department of dentistry, and the American college that would accept the certificate of any practitioner whatever as the equivalent for a part of its curriculum, would soon find itself disfellowshipped.

Dental Prac. and Adv.

A DENTAL NATIONAL MUSEUM.

Dr. Williams Donnally, of Washington, D. C., made in the American Dental Association a strong plea for the acceptance of the offer of the Army Medical Museum and Library, at Washington, D. C., to provide room in a fire-proof building for a national dental museum, with proper facilities for the exhibition of the specimens, and as well to care for them without charge. Tracing the origin and uses of the museum from the earliest period to the present time, he showed the development of the modern idea of the value of such institutions as aids in the acquirement of knowledge, as Professor G. Brown Goode puts it, "the most powerful and most useful auxiliary of all the systems of teachings." "They are houses full of ideas," and their laboratories and libraries are the best to aid in original investigation and the extension of the bounds of knowledge. They are fast becoming the centers of learning, where the men of greatest attainments in science will be found.

Passing to the consideration of the Army Medical Museum and Library, Dr. Donnally presented a mass of interesting information concerning it. Much of this was contributed by Dr. John S. Billings, Deputy Surgeon-General and Librarian in charge, whose keen appreciation of the ideal medical museum and library, wise administration, and herculean labor have brought to the institution universal renown and the well-deserved appreciation of the whole medical world. It includes human anatomy, physiology, pathology, somatological anthropology, instruments and apparatus, and illustrations of methods of teaching connected with special departments of practical medicine. It is not an anatomical, but a medical museum. On June 30th, 1894, it contained 32,269 specimens, of which 12,249 were pathological, 4,376 anatomical, 1,717 illustrative of comparative anatomy, 12,033 microscopic, and 1,394 miscellaneous. Laboratory work is constantly active, largely in bacteriology, embryology, and microscopy, some work having been done in the embryology of the teeth and jaws.

There are 114,567 bound volumes and 183,778 pamphlets on its shelves. It contains three-fourths of the medical literature of the world, and nine-tenths of the medical literature of the last ten years. Annually there are about 53,000 visitors to museum and library, and the library is made use of by over 3,000 students. The library receives all the medical periodicals from all over the

world and in all languages, to the number of 1,200. The government appropriates \$12,000 annually for the purchase of books and pamphlets, but the library grows largely through the donation of private collections and the gifts of individuals, besides a copy of every book, magazine, and pamphlet published in the United States. There is pouring into it a constant stream of literature, not only from this country, but from abroad. It not only contains more literature than the library of the British Museum or the National Library of France, but it covers a wider field, represents better the medical literature, and is decidedly a better practical reference and working collection for medical purposes than either of the great libraries mentioned.

Two publications emanating from this library have a world-wide reputation—the “*Index Medicus*,” of the current medical literature of the world, which appears monthly, and the “*Catalogue*,” which contains references, by subject and author, to every bound volume and pamphlet in the library, and all the articles of value in the magazines, indexed under subject heads. Fifteen volumes of the latter publication have so far been issued, with an average of over 1,000 pages each.

Each of the medical specialties is represented in the two branches of this institution, though the number of works relating to dentistry in the library is far below a creditable showing as compared with some of the other specialties, and the specimens in the museum but the beginning of a collection. The members of the profession alone are to blame for this, as Dr. Billing's efforts to awaken the dental profession to a conscious sense of its interests in this regard have met with but little success.

Here has been prepared for our acceptance and made available for our use, without effort or expense on our part, an institution offering grand opportunities almost wholly neglected—neglected in a way that does not comport with the dignity, aims and boasted achievements of dentistry. It must seem to some that we shrink from bringing to this great institution the evidences of our professional attainments, to stand side by side in comparison with those of other branches of the healing art.

Though the Army Medical Museum and Library is a branch of the medical department of the government, housed and maintained by congressional appropriations, it is the recognized and officially accepted National Museum and Library of the medical profession, and as much or more the pride and interest of the individual members of the profession as if under the control of their national organization. As a government institution, mature

in experience and with an established policy, it is certain to be perpetuated under competent management.

Thousands will form their estimates of the value of the attainments of the various branches of medicine and surgery by comparing here their exhibits of specimens. For this reason, and because so much of dentistry can be illustrated by models, drawings, etc., we should make this the greatest object-lesson in the world. Nowhere else could we so well impress on army medical men and government officials the necessity and duty of providing dental surgeons for the army and navy; and in no other way so well educate people of influence to comprehend the need of teaching and practically enforcing dental hygiene in the public schools.

The quantities of museum material in single specimens and small collections hidden in offices for a time and then cast away, lost to the profession because of the supposed want of a safe depository, would be of value to the profession and the student if sent here, where their usefulness would be increased by association as parts of a complete series.

Dr. Donnally, in closing, urged the consideration of the opportunity afforded by this National Medical Museum and Library to accumulate, preserve and exhibit, at government expense, ample stores of literature and museum specimens to illustrate our history, progress and attainments, and to evidence, as we can in no other way, our claim to the attributes of a liberal profession.

[Some years ago we urged this important step, and obtained from officials assurance that the door would be open to us. At the same time we suggested that our two great dental associations be amalgamated into one National Association, into whose custody this museum should be. In this effort we were associated with many other dentists in a meeting held in Washington.—ED. ITEMS].

Dr. Donnally's paper was discussed as follows:

Dr. M. F. Finley, of Washington, D. C., moved that this Association formally adopt the Army Medical Museum and Library as the National Museum and Library of the Dental Profession of the United States.

In support of his motion, Dr. Finley said that the American Medical Association has formally adopted this museum, as had also several of the specialties of medicine. Dr. John S. Billings has also strongly recommended this course.

Dr. Crouse wished to know what expense would be entailed by the adoption of this motion.

Dr. J. D. Patterson, of Kansas City, said that if any of those

present had never visited this museum, a single visit now would make them heartily favor the motion offered by Dr. Finley. The Army Medical Museum and Library is certainly the place to found a dental museum, if such a movement is to be made.

Dr. J. Taft, Cincinnati, Ohio, had visited the Army Medical Museum and Library two years ago or so, and had had a conference with Dr. Billings, who is quite anxious for dentistry to have proper representation within its halls. It already has the nucleus for a dental library and museum, and the movement should be carried forward. There will be no expense attached to the adoption of the proposition, except that of sending or placing specimens and contributions. Such specimens appertaining to dentistry as are already in the museum are now placed with specimens from other departments, but the officers of the institution are willing to furnish a room, amply sufficient in size and fire-proof, for the special purpose of keeping dental specimens, if the proposition is accepted. Another reason why we should aid in this movement to make a really National Dental Museum is that many of the books and specimens there are in duplicate, and they can be had in exchange for others, and so help to enlarge the museums and libraries in the dental colleges. He could hardly conceive of any better object than the establishment of this museum.

Dr. Finley's motion was adopted.

Dr. Donnally then moved the appointment of a committee to coöperate with the authorities in establishing the dental museum. He stated that the government allows annually \$30,000 for the maintenance of the Army Medical Museum and Library, and \$12,000 for the purchase of literature, including the journals. He had been informed that from \$1,200 to \$1,500 of this amount would be available for dental works, if it should be required. The museum now takes all the dental journals published in all languages, so far as they are known to them.

The motion was adopted, and at a later session the committee was announced as follows: Drs. William Donnally, J. Taft, H. J. McKellops, L. D. Shepard and Henry W. Morgan. *Cosmos.*

A SEPARATING MEDIUM THAT IMPARTS A SMOOTH GLOSSY SURFACE TO YOUR PLASTER.—Coat impression with very thin shellac varnish, just enough to color the plaster. Then coat with a varnish made by dissolving gum sandarac 3 parts, gum elemi 1 part, in pure alcohol. It must be thin enough not to form bubbles when applied with soft brush.

TIDINESS.

T. F. Chupein, D.D.S., Philadelphia.

I called on a dental friend one afternoon after office hours, to make him a friendly visit, and found him, as he usually is, cheerful, though at the time his chair was empty. After conversing for a time in his den of horrors, I could not help commenting on the neatness of his surroundings and the freedom from all litter about his operating chair.

"Have you been working at your chair to-day?" I inquired, and he answered, "Yes, since half-past eight o'clock this morning."

"Well," said I, "your chair, your rug, your instruments all look more as if you were about to begin, not to finish work for the day. How do you do it?"

He then told me that he had schooled himself to work in this way.

"I have duplicate excavators and nerve instruments. As soon as I have finished working with these for one patient, my attendant removes them from the bracket table and puts them in the sterilizer.

"All pieces of cotton, bibulous paper, spunk, ends of ligature silk, and sandpaper disks, instead of being thrown on the floor I put into the little red glass vase which I keep on my bracket table for the purpose.

"Mouth napkins, towels and rubber-dam I put into this basket,"—indicating a basket with a lid, similar to what is used by fishermen—"which keeps them out of sight, and makes the operating chair and its surroundings as clean and tidy for the patient leaving it, as for the one who is to occupy it.

"Besides this I always keep a napkin over my head rest, which I remove in presence of the new patient, and replace with a clean one, for it is not pleasant for our patients to lay their heads on a napkin which has been used by another, however tidy the former patient may look.

"In a long operation, especially on the lower jaw, when the rubber has to be kept in place by a clamp, which makes it almost impossible for the patient to retain the saliva, I have a square of rubber-dam (a yard square), this I place in front of the patient over the dress, and over this a nice large clean towel.

"When the dam has been applied, I place a small napkin over the patient's chin beneath the dam, and hold this in place with

two clamps applied (one on each side) to dam and napkin. In this way the patient is made as comfortable as possible, and the operator can work more comfortably and tidily."

In contrast to this we have seen dentists' offices at the close of the day's work a mass of disorder and litter. On the rug next his chair were strewn bits of ligature silk, sandpaper disks, wads of cotton, pieces of bibulous paper, bloody napkins and the like. Dirty water would be in his basin, which probably had been used half dozen times while he waited on that number (or may be more) different patients. A wet towel lay on the back of a chair. Pieces of dam lay strewn over the carpet, letters and newspapers occupied desk, chairs, sofa or book case, all presenting such a disorderly and untidy appearance, that if a patient could see it who had any notion of order and tidiness, she might deliberate about employing such a dentist, however great might be his qualifications or skill.

It costs no more to be tidy than untidy, once a man gets in the way of working tidily, and it is only necessary for him to adopt a tidy habit and school himself into this way of working by thinking a little when he is in the act of working or doing some untidy trick or habit. Once the habit of working tidily becomes well instilled it becomes a second nature, and the work goes on intuitively without an effort.

Southern Journal.

BEST INVESTING MATERIAL.

George Evans, New York.

I notice in the November issue of your journal the query answered as to what is "The Best Investing Material" (page 509).

My answer to that would be: For single crowns or very small investments, 2 parts calcined marble dust and 1 of plaster; for large investments, including pieces of bridge-work, 1 part calcined marble dust, 1 part common white sand and 1 part plaster. In the latter proportions the sand prevents the excessive contraction that is liable to take place in large masses of investing material entirely composed of plaster and marble dust when subjected to great heat for considerable time.

The marble dust in combination with sand renders the material more suitable to fill interstices and inside of caps. In bridge-work of any great size, a loop of iron wire should encircle the piece in the investment.

Ohio Dental Journal.

A METHOD OF ANCHORING LARGE CONTOUR FILLINGS IN INCISORS.

Dr. C. N. Johnson, Chicago, Ill.

From observation it would seem that the majority of operators prepare the cavity in the following manner: After the usual conformation is given the cervical portion of the cavity, anchorage for the occlusal half of the filling is obtained by drilling obliquely into the cavity toward the occlusal surface between the two plates of enamel as they come together. Anchorage of this form frequently develops a weakness which results in a loosening of the filling as follows: The gold which is built into the occlusal undercut becomes slightly battered or compressed as the result of force exerted on the end of the filling, and the whole filling is thus allowed to tip away from the cavity, leaving a seam or space between the filling and tooth. In some cases a filling will remain partially dislodged in this manner for a considerable time without perceptible loosening, while in others the filling is forced bodily out of the cavity shortly after its insertion. It will readily be seen that any compression of the gold in the act of biting on it will lift it away from its close adaptation to the occlusal undercut and result in a leakage of the filling—if not in a total dislodgment. So many cases of failure from this cause have been noted, and so many inquiries as to a surer method of anchoring these fillings firmly in place have recently been made of the essayist, that he has been induced to prepare a short paper embodying his views on the subject.

Possibly a clearer idea of the method to be described may be gained by taking a typical cavity and outlining its preparation than by speaking in a general way of the process. Let us suppose we have a large mesial cavity on a left upper central incisor. There is little penetration of the decay toward the pulp, but the entire mesioöccusal angle of the tooth is gone. This form of cavity apparently presents greater difficulties to the average operator than where the decay has penetrated deeper. In the present method of preparation the cervical half of the cavity is shaped in the usual way, being liberally extended cervico-labially and cervico-lingually. To obtain anchorage at the occlusal portion of the filling, instead of drilling into the axial wall in the ordinary manner, a groove is cut along the occlusal surface leading from the cavity distally to near the distoöccusal angle. This groove must be made sufficiently wide and deep to admit of a large enough mass of gold being packed into it to insure strength, and in order to accomplish this

in teeth with thin occlusal surfaces it is often necessary to cut away the lingual plate of enamel somewhat freely. This may be done with safety, provided the enamel margins are properly beveled and gold built over them in the insertion of the filling. The distal end of the groove may be deepened somewhat to assist in retention. The philosophy of this form of anchorage consists in two things: First, it will prevent absolutely the tipping of the filling previously alluded to; and second, it increases materially the seating capacity of the filling. Since the appearance of Dr. Black's articles on the compressibility of filling materials and kindred studies, the seating area of our cavities becomes a matter of much importance, and it seems quite conclusively proved that, other things being equal, the larger the area on which the filling rests to sustain it in the force of mastication the greater security it has against dislodgment. With the form of anchorage just outlined it becomes impossible for a filling to get out of a cavity short of a breakage, and if the mass of gold is made thick enough it will not break. It is readily seen that the greater the force brought to bear on the filling in the closure of the teeth, the firmer it is driven into the cavity, and if there should be any compressibility of the filling material the tendency would be toward a closer adaptation to the cavity walls instead of a lifting away, as in the ordinary method of anchorage.

At first glance there might appear to be several objections to this method. Some operators may feel a hesitancy about drilling into sound tissue in this way for anchorage, but it must be remembered that in the preparation of any cavity sound tissue is often sacrificed for this purpose. In this instance I am convinced that it is sacrificed to good account, and I feel sure that when the operation has once been done in this manner the operator will to a large degree find his hesitancy gone. There is a feeling of security when the gold has been built well over and anchored into the occlusal surface that does not obtain in any other kind of cavity formation for this class of fillings. Another objection might seem to rise in the apparently unprotected labial plate of enamel. The labial plate is always left standing for appearance even when the lingual plate must be cut away for strength, and if not properly protected might prove an element of weakness. But by carefully beveling the enamel margin and building gold over the bevel, it is so perfectly protected that in all my experience with this method I cannot recall a single instance where this wall has failed. The acute corner at the mesioöcclusal angle should be rounded slightly, and the same corner on the lingual plate should be cut freely away,

so that the outline of the filling is a gentle curve from the proximate to the occlusal surface.

This form of filling provides an adequate protection for the end of the tooth, and does away with what is ordinarily a vulnerable point in most fillings of this class when constructed in the usual way, *viz.*, the junction between gold and enamel at the occlusal surface. The slightest chipping away of the enamel at this point is often disastrous, and results in final destruction of the filling. Again, there is opportunity for deeper and firmer anchorage without danger of approaching the pulp than where an undercut is drilled into the axial wall. The cavity is rendered freer of access for the insertion of the filling, and while more gold is used, it is more readily inserted and is hidden from anterior view by the labial plate of enamel. A filling of this form therefore looks no more conspicuous in front than where the occlusal surface is left intact.

There are, of course, many cases of contour filling in incisors where this method is not applicable, such for instance as a pulpless tooth where the decay is deep, or where the dentine is badly involved and the lingual wall gone for some distance toward the neck. These are the cases, however, where anchorage in other ways is easily obtained, and every operator must discriminate carefully and decide for himself which method is indicated in each case that presents. I have merely endeavored to point out a method which is applicable to a certain class of cases, and I confidently believe that if it is judiciously carried out it will prove a reliable means of anchoring fillings in a form of cavity which heretofore seems to have given the profession much trouble.

Dental Review.

A good many years ago I introduced lactic acid, for I found it to be an excellent absorber of lime, and it did not act on the soft tissues. Sulfuric acid acts alike on the soft and hard tissues—the healthy as well as the diseased. Lactic acid has this superiority over sulfuric acid, that it does not act on the soft tissues except to stimulate. I use it not only when I want to dissolve for necrosed bone, but also as a solvent of tartar in pyorrhea. I found in that operation its effect on the soft tissue is to stimulate granulations and reunite the gum tissue with the tooth, something that sulfuric acid cannot do. I think in the course of a few years sulfuric acid will pass out of the sphere of the stomatologist.

Dr. Younger.

TREATMENT OF PULPLESS TEETH AND ROOT FILLINGS.*

Dr. B. C. Campbell, Lake Geneva, Wis.

I shall presume that we understand by a pulpless tooth one whose pulp has died under a filling, and remaining in a putrescent condition, or in some teeth showing no signs of decay, death being brought about by traumatic injury.

By diagnosis, such symptoms will be found as unusual length of tooth, neuralgia, dark color, abscess with fistulous opening, lack of sensitiveness to heat and cold, tooth tender to the touch, and by the use of heat.

The operator must note well the other symptoms, for by the application of heat to a pulpless tooth the mephitic gases in the pulp chamber and canals, on being heated, may expand, causing pressure on the tissues in the apical space, and consequently pain which will be mistaken for a live pulp.

The first step in the successful treatment is to gain a free and slightly opening into the pulp chamber and canal, or canals, as the case may be. This in the anterior teeth, where there is no cavity present, or if there be one, so situated as not to afford direct access, by cutting slightly, I consider it better to make an opening through the lingual surface into pulp chamber. This I apply to all the six anterior teeth, upper and lower.

By using a small, sharp pointed drill and bringing pressure to bear where the tooth is tender to the touch in the opposite direction to the force applied, this opening may be made larger at will by the use of burs. Bicuspid and molars may be opened to the canals through the crown cavity, or when there is a proximal decay, better to obtain direct access by cutting through to the occlusal surface. When we find these teeth filled with gold and the fillings are perfect, we should open through the crown, leaving the filling undisturbed.

Having gained the access desired, that I may not force any of the contents of the canal into the apical space, and this point I desire attention to, as it may prevent you from having an additional trouble of pericementitis, followed by an abscess, causing the patient unnecessary pain, I place loosely in the cavity some of the essential oils, usually oil of cassia, and dismiss the patient for three or four days. At this time I apply the dam, wash the cavity with hot water, follow by 3 per cent pyrozone or peroxid of hydro-

* Read before the Wisconsin State Dental Society.

gen and $\frac{1}{1000}$ solution of bichlorid of mercury, equal parts. Then by the use of a hooked broach or Donaldson's cleansing broaches, I remove all of the decomposed matter of the canal. When impossible to treat successfully on account of having small and tortuous canals, I bring them under control by thorough removal of decomposed matter, and seal in the cavity a 10 per cent solution of sulfuric acid for twenty-four hours, after which the canals can be opened and enlarged by continuing the acid treatment.

I have used Dr. Schreier's treatment with satisfaction. This medicament applied to the putrescent contents of the canal is changed into hydrates of kalium and natrium, and the fatty substances are saponified. Heat is evolved during this chemical reaction which, while not sufficient to kill bacteria, will destroy food for their future development. The contents of the canal may then be washed with hot water, which is in itself a disinfectant. As oil and water will not mix, I dry out the canals and insert oil of cassia, as it has been proven by experiment to be one of the most thorough disinfectants for our purposes we have, used not only alone but in combination with other drugs. It has been announced by M. Chamberland, of M. Pasteur's laboratory in Paris, that no living germ of disease can resist the antiseptic power of the essence of cinnamon more than a few hours, and is said to destroy microbes as effectually as bichlorid of mercury, even the scent being fatal to them. The cavity is now sealed and punctured to allow the escape of mephitic gases, should any be present, and the patient dismissed for eight or ten days, when I expect to be ready for the root filling, but never do I introduce a root filling till I have made myself reasonably sure that all products of decomposition have been removed. Having satisfied myself of thorough instrumentation and medication of the canal or canals, I dry them out with hot air thoroughly. This is accomplished by taking an ordinary chip-blower and drawing the air through the alcohol flame and inserting the point of the tube into the pulp canal, compressing the bulb slowly at the same time, and then allowing the bulb to expand to draw the air out again. I next introduce a broach, and if by wiping it on a rubber-dam it leaves no traces of moisture, I feel confident that it has all been removed.

The many kinds of material in use are gold, wood, cotton, copper point, lead cement, metal fiber and gutta-percha—the last perhaps being used by most dentists. To fill with the latter, which I use exclusively, I moisten the wall of the canal with cajeput, or eucalyptol, placing on my broach a little disk made of rubber-dam; placing this in the canal, I follow it up till the

patient responds to sense of pain at the apical foramen, thus giving me an exact measurement of the length my gutta-percha cone is to be to exactly fill the foramen. I then place my cone, if it be too large, between two heavy pieces of glass and roll it to the size I desire. After pumping into the canal thin chloro-percha, I introduce the cone already prepared and force it carefully to the apex, knowing by my measurement and by the response of feeling by the patient that it has reached the apex.

Having my roots filled, if I am going to fill the crown with plastic material, I fill at the same sitting. If it is to be filled with gold, it is best to fill with cement temporarily and leave for a few weeks. After all root fillings are made I apply a counter-irritant to the gums over the apex of the roots. Success depends on thoroughness in each step of the work.

Dental Review.

REPLANTATION.

E. S. Pettyjohn, M.D., Alma, Mich.

My little daughter, aged two years and nine months, fell headlong down the cellar stairs and struck the two upper middle incisors on the edge of the step, extracting them as completely as if by forceps. The alveolar processes of the right tooth were fractured and the gum lacerated the entire length of the root. We found the teeth on the cellar steps uninjured. They were placed in a normal saline solution of tepid temperature. On the arrival of an assistant with the chloroform for anesthesia, the child was sleeping quietly. Chloroform was administered without the child awaking and the teeth were placed within their sockets and pressed into position; the edge of each tooth fitting firmly in a groove of one blade of a forceps, the hand of the operator being placed on the back of the head with the pressure properly directed. The gums about were cleansed antiseptically and the teeth left in position without further dressing or application.

The accident occurred about 2 o'clock, and when the child awoke from her sleep at 5:30, her teeth were in place. The teeth had been out of the mouth fully one hour. Milk and soft food were administered, and the lacerated gums cleansed after eating. Healing of the gums occurred by first intention.

It is now over four weeks since the teeth were placed, and they are now solid, in good position and of normal color. The gums are normal in color and consistency and the appearance of the mouth quite natural.

Cleveland Medical Journal.

THE STRUGGLE FOR PROFESSIONAL LIFE, AND ITS
RELATIONS WITH PRACTICE.*Dr. Louis Jack.*

He who has determined to enter into the practice of dentistry has commenced a course which in many of its aspects is attended with large and exacting responsibilities. He is to have in his keeping the preservation of an extremely essential portion of the human body, the derangements of which are far-reaching and fraught with general disturbances of the whole bodily economy. Therefore he requires the mastery of the principles and sciences which are related to the practice of medicine and surgery, added to the special knowledge of dental science, and also the skill in techniques and mechanics demanded to give practical efficiency. The student should keep always in view that it is a right principle to devote the strength of his mind and body to the requirements that scientific study and practical preparation impose on every intelligent and rational mind, and that it is wrong and damaging to waste precious time in early manhood which should be devoted to study and research. The plans of the present system of the better colleges are intended to correct the disposition of the students to shirk duties, and to check the bad habits of overloading the mental stomach at the end of the term with a mass of indigestible pabulum which had better have been taken meal by meal. The brightest and the most useful men of all ages have been those who have taken up the battle by faithfully devoting themselves in their earlier years to throw off the leaden weight of dullness and master their mental environments. The adjustment of plant, animal, or man to his environments is really what is meant by the familiar term, "The struggle for life." This struggle, which involves the survival of the fittest, is not as harsh as it may appear on the surface. It is on all of us, and we cannot escape from it. With animals it is for bodily sustenance; with man it is as well for mental, moral, and spiritual growth.

The great purpose of life is the development of character. This is done by the toilsome rearing of truth on truth, and cementing them into the mental constitution. Loyalty to our profession may without impropriety be fittingly compared to patriotism, for to honor is to do everything which can render good to our country, whether the service be of mind or the yielding up of life when it is required. We must be ministers and soldiers, as there may be need.

The foregoing does not appear on the surface to have much

practical relation to the practice of dentistry ; but is it not plain that the further elevation of dentistry depends on the intellectual training of the younger men, and the motive forces which animate all who engage in this work? We will often find that the result of the struggle which brings about the survival of the fittest will produce a broad and general advancement of the practice of dentistry, to the lasting and personal benefit of every honorable person engaged in the splendid and beneficent service which that profession is to mankind.

International.

TOOTH ABRASION.

A correspondent presents the following :

“DEAR SIR :—I write to ask you a question. ‘What is the best treatment for chemical abrasion of the upper incisors?’ The teeth are abraded badly—the two centrals and laterals, commencing a little below the margin of the gum and extend about half way down the front. The abrasion at the upper edge, which is a little below the gum, is very deep, so as to make almost a square shoulder, but decreases in depth as it goes down. It looks as if a half-round file had been drawn across the front. The depression has a perfectly smooth and polished surface, even more so than the enamel itself. The cuspids also are affected, but not so much, and in the first bicuspid you can see a trace of it. I know it has not been caused by any mechanical action. The party is about forty-five years old, has taken the best care of his teeth, and this has appeared in the last two or three years. What can be done for it? Will you please give me what information you can? It would confer a great favor on me as well as on the patient.”

In reply to the above request, we may say that the affection you describe is often found, and usually on teeth of the better varieties, and even the best teeth are sometimes affected in this way ; the inferior kinds of teeth are rarely if ever abraded in this manner. In regard to its cause there has been a number of theories advanced, but none of them fully established ; these theories we need not discuss or even mention here ; you have a case and wish to know what to do with it. In the first place, note the conditions of the mouth, the gums, the mucous membrane, the secretions, the saliva and mucus. If any of these are abnormal, determine the condition as accurately as possible ; if the tissues are affected, restore to health by the appropriate treatment ; if the secretions are vitiated markedly abnormal, they should be restored

to a normal state, this can only be done by systemic treatment, which ought to be hygienic rather than medicinal; notwithstanding the latter will, sometimes, be required, and should be such as will act on the secretory organs. In some, changes may be brought about by simply hygienic means that will so change the condition of the mouth that the wasting of the teeth as above indicated will be retarded, sometimes arrested. But so uncertain has all such treatment proved hitherto, that it cannot alone be relied on. Where grooves or pits of some considerable depth have been made, filling seems to be indispensable, and even where a large plain surface is wasting away by this process, putting on a covering of gold seems to be clearly indicated, as the most certain means of prompt arrest. We hope the time is near when we will know more about this affection, and when we will be able to prevent its ravages by more certain means than we are now able to command.

Ed. Den. Register

A NEW METHOD OF CHLOROFORMING.

Dr. H. L. Northrop has discovered a new method of administering chloroform, which, it is asserted, is less dangerous than the old, and is not accompanied by the nausea and other evil effects that have made its administration so unpleasant.

He says: It is a vapor of oxygen passing over into a bottle of chloroform and then conducted to the patient, who inhales the gas mixed with the vapor of the chloroform. It takes three and a half minutes to bring about complete unconsciousness. When two drams of chloroform are used, a patient will remain unconscious long enough for the performance of a half hour operation. To resuscitate the patient, pure oxygen is administered, and consciousness is brought back in a minute with not a single evil effect. The patient feels just as well as if there had been no chloroform administered. When the chloroform is administered by this method the respiration is scarcely accelerated, and the breathing is strengthened by the use of the oxygen. The pulse does not vary four beats from normal. Ordinarily it has been considered dangerous to administer chloroform to patients with slight heart trouble. Administered in this new way it does not seem to affect them at all. Patients have submitted to an operation and left the hospital the same day when the chloroform was administered by this method. This was impossible before, for it took from one to three days to fully recover from the effect of the chloroform.

Exchange.

LIQUEFYING GASES.

The subject of the liquefaction of gases has long been a fascinating one for the physicist and experimenter. Chlorin and carbon dioxid were among the first, a number of years ago, to succumb to pressure, and after awhile scientists established two classes of gases, the fixed and the liquefiable gases. This division no longer exists. All the elemental gases have been liquefied, and the apparatus has been so perfected that with comparatively simple appliances, and in a space of ten minutes, liquid air can be collected like water in an open vessel, and the assertion has been made within a few months, by one of the best qualified investigators of the world, that in the near future liquid air will probably be the great source of artificial cold. Even more wonderful is the liquefaction of air produced by the cold due to its own expansion, which has been accomplished recently on what may be termed the commercial scale. We may, within a few years, see liquid air supplied and used by the liter like any common chemical.

The old time gas engineer produced hydrocarbon gases from hydrocarbons prepared in preceding geologic ages by the mighty forces of nature working through the quiet agency of the profuse plant life of the carboniferous and other eras. The dreams of the advanced technologist, who recognized the crudeness of the coal gas and water gas processes, the latter seeming but slightly an advance over its predecessor, would sometimes take the shape of the future synthesis or direct combination of carbon and hydrogen. If this could be done on the large scale, gas making would stand on a new and scientific footing. The later triumphs of chemistry are largely in this field of synthesis, and now, in the direct production on the large scale of a hydrocarbon, chemistry has distanced its greatest achievements of the past as far as the technical field is concerned. Acetylen will always remain one of the milestones of the world's progress. Its production is due to the development of the dynamo—it is a gift made by physics to its sister science, chemistry.

The analysis of air was early attempted, and has been made so often that it seemed as if its composition was settled forever. It was always treated as of fixed composition, no variation being found in it wherever collected, unless artificially contaminated. But within a few months the world of science was startled to hear that an element hitherto undiscovered was a constituent of air, and that its composition had never been correctly determined; the

new analysis showed the existence in air of the strange neutral element, argon. Argon and acetylen represent triumphs of the opposite branches of chemistry—of analysis and of synthesis respectively.

And now the world is electrified over a new discovery exemplified by the reproduction of an image of an object through opaque screens by hitherto unknown rays—we allude to Röntgen's discovery of X ray photography. Science had accepted the undulatory theory of light; it had, by referring light phenomena to wave motion of the luminiferous ether, accounted for all the actions of light, a mathematical explanation of refraction and reflection had been reached, and the undulatory theory of light seemed to include actinism or photography. Since the beginning of the present year the epoch making work of Röntgen has been published, and it presents no greater degree of achievement than it does of mystification as it affects the theory of light.

No age has ever witnessed such a succession of triumphs of science in so short a time. The effect of the cumulated wonders is to prepare us for any revelation of science—to almost dangerously increase our powers of belief. They make it harder than ever to discern and fix the true limits of natural science. To the working scientist, the discoveries are an inspiration, for they show him that the extreme elevation of universal knowledge has not yet been reached; he still has heights of discovery to climb, of altitude unimagined seriously by the world of but a decade ago. The synthesis of carbon and hydrogen, the liquefaction of air and hydrogen, the discovery of argon, and the discovery of X ray photography, will add new luster to the names connected with the work. Rayleigh, Ramsay, Dewar, and Röntgen among the pure scientists, and Wilson and Linde among the technologists, will have their fame increased by the renown which their achievements will impart to the expiring nineteenth century.

Scientific American.

Many dentists have little disagreeable habits that offend patients. They may be easily cured, if closely watched. Picking or blowing or scratching the nose, hawking and spitting, grunting, humming, scratching the head, breathing in the patient's face, leaning on them, or any act of familiarity, coarseness or offensiveness should be avoided. Be a gentleman, covers the whole ground.

CAPPING PULPS.

Dr. H. J. McKellops has used for a good many years a method of capping pulps, whether the pulp is actually exposed or merely sensitive to heat and cold. He uses a cap cut from asbestos paper and covered with a paste of iodoform in glycerol.

Dr. J. Y. Crawford: The pulp is a very sensitive organization, but I am convinced that when properly handled and under proper conditions the vitality of an exposed pulp can be conserved. I know of no agent more valuable in this connection than pure beech-wood creasote. In the use of the chlorid or phosphate of zinc cements it is essential to have only the finest, purest, cleanest white oxid of zinc from which every trace of arsenic has been removed, and this is very difficult to get. Dr. White, of Silver City, N. M., is enthusiastic as to the valuable qualities of what he calls balsamo, and presents an interesting record of the results of his experience in the use of this material.

Dr. J. H. Boozer has been successful in capping pulps by using the balsams, with a cap of paper or tin foil.

Dr. John S. Thompson, in capping pulps, cuts the cap from that portion of an envelope which is gummed, moistens it on the lip or tongue of the patient, and applies it to the exposed pulp, covering it with cement. The paste used by the U. S. Government is a pure antiseptic dextrin paste, and he has been very successful in saving exposed pulps since he has capped them in this way.

Dr. C. L. Boyd has been more successful in saving exposed pulps since he had adopted the plan of devitalizing the pulp of every tooth in which he does not find the dentin sensitive above the cornua of the pulp. The successful use of aristol demands considerable experience to know when its use is indicated, and it is also inconveniently sticky and gummy. A mixture of oil of cloves, carbolic acid, and beech-wood creasote makes a good covering for an exposed pulp, pressed to place under an inverted disk, all excess of fluid being removed with absorbent cotton, and soft oxiphosphate placed over the cap, carefully avoiding pressure on the pulp. By selecting only teeth in which the dentin is normally sensitive, he saves ninety out of a hundred. *Cosmos.*

Dr. Mitchell says: "A heated instrument applied to the tooth will generally settle the question whether the nerve be dead or alive."

A NOTE ON CAPPING A TOOTH PULP.

Dr. C. R. Taylor, Streator, Ill.

It is often troublesome to cap a pulp with oxiphosphate of zinc, on account of that material sticking to the instruments used to convey it to the parts desired to be covered without spreading it over the whole of the cavity. By the use of the following method the troublesome part can be avoided :

Take a piece of clean writing paper of the proper size, and on the paper place a sufficient quantity of the cement, soft or hard, as the case requires ; having taken hold of the corner of the paper with the pliers before the cement was placed on the paper, carry the paper and cement to the parts to be capped, pass a burnishing instrument against the paper and burnish the capping to its place. If it is desired to get the benefit of the sticking qualities of the cement to assist in holding the filling in the cavity, put cement on both sides of the paper, before placing it in place.

The same method can be used with the paper and chloro-percha.

Not only does the paper act as a convenient carrier, but it is a splendid non-conductor. Superior to almost everything used for that purpose.

Office and Laboratory.

THE WALKER PHYSIOLOGICAL ARTICULATOR.

Dr. W. E. Walker, Pass Christian, Miss.

The articulator constructed with the adjustable angle, with set screws to secure it and gages to register the degree of the angle found in individual cases, which sometimes varies even in the two sides of the same face, with a further modification enabling the correction of "a wrong bite," constitutes what we have called the "Walker Physiological Articulator," because it is not only automatically but also physiologically (that is functionally) correct throughout.

Seeking the cause of the peculiar features in the articulation of models of the natural teeth, in the movements described by the lower jaw of the reconstructed articulator, led to the discovery of the downward as well as "forward" movement of the condyle in the antero and lateral excursions of the mandible, and also in opening the mouth ; which, so far as he has been able to ascertain, has hitherto escaped observation, or perhaps not been deemed of sufficient importance to be placed on record in the literature of

human anatomy. Its practical importance to the dental specialist has been indicated.

To reproduce with artificial teeth the articulation of the natural teeth, to give the grinding and biting functions to artificial dentures, instead of the usual up-and-down mashing action of full dentures with nearly cusplless teeth, led to the minute study of the cusps of the human teeth, both in the mouth and from models and their inter-articulation. This led to the discovery of what might be called the law of the cusps, the variation in the distance from the base of the sulcus to the point of the cusp from the main lower cusps of the second bicuspid increasing distally in the superior lingual cusps and the inferior buccal cusps, conversely decreasing distally in the superior buccal cusps and the inferior lingual cusps.

This is clearly seen by placing the model of as perfect a set of natural teeth as can be obtained, cusps downward, on a clear slab of glass, bringing the successive pairs of teeth under observation to the edge of the glass, where the relative height of the cusps will, as a rule, be found as stated.

Dental Register.

To secure adhesion between the walls of a cavity and any metal we use oxiphosphate. The amount of cement to be left in the cavity is usually small; so that it is seldom necessary to carry but a small amount to the most accessible wall of the cavity, where it is scraped off of the instrument at the margin of the cavity. No particular attempt is at this time made to spread it over the walls of the cavity, as it will not always be an easy thing to do, and much valuable time will be lost. Enough amalgam to make a thin layer all over the walls of the cavity, and of the right consistency to permit its being readily and perfectly adapted to it, is then placed in the cement and quickly carried, forcing the cement and air ahead of it, all over the walls of the cavity till they are completely covered. Press home with force.

To insure a perfect metal contact of the filling at all margins, however remote they may be, it is simply necessary to carry a properly shaped excavator around these margins, and remove both the metal and cement at the enamel edge of the cavity.

This layer of amalgam so adapted will remain where first placed, and the remainder of the filling may be built up after any method indicated.

J. C. St. Just, D.D.S., in Dental Review.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 241. *Man, aged 60; large, healthy, robust; no sign of organic disease. Lower teeth in good condition. The second and third molars on right side have been extracted. He applied for relief of pain in the third molar six months ago without relief. Upper teeth in good condition; right second molar extracted, and first bicuspid broken down to gum, but root is solid and seemingly healthy.*

Complaint:—In opening the jaw, after a period of rest, in passing the hand gently over the right side of face, or combing hair or beard on right side, and in closing jaw, just as the teeth come in contact, there is a sharp pain which seems to pass through the inferior dental nerve and centralize at the root of the lower first molar, which is sound and apparently healthy. Hard pressure in any of these regions causes no pain, and there is no soreness. Duration of trouble about four years, but is not constant, often not present for several days; never troublesome at night, and he sleeps well. What is the cause and treatment?

Take patient to a good surgeon; an operation will be the only relief. I think the seat of trouble is just back of the right eye.

W. U. Morgan, Columbus, Ohio.

As there seems to be no organic trouble, I think the pain sympathetic, and during its duration would apply to affected parts:

R.—Chloroform 3ij.

Tr. aconit rad.,

Tr. belladonna āā 3iij.

M. et dig.—Apply on cotton.

W. A. Grove, Tipton, Iowa.

As the pain seems to centralize at the root of the lower first molar there is probably the trouble. I would extract that tooth, shorten the roots somewhat, and, after a few days antiseptic treatment, replant.

J. P. Collins, Boone, Iowa.

An interesting case requiring a close examination; that it is a neurosis seems probable, providing there is no undiscovered predisposing cause in lower first molar, in the way of osteo dentine; correct all trouble in suspicious teeth and root; extract right upper third molar, as it has no occlusion, and open into lower first molar; should this prove ineffective sever the inferior dental nerve.

J. Clarke, West Superior, Wis.

I would say that the trouble is located in the first molar. It is my opinion that exostosis of root is causing the trouble. Exostosis has possibly

been caused by the undue amount of work this tooth has to perform, or it may have been caused by some concussion received several years since.

Treatment.—I would suggest the extraction of first lower molar.

Henry Pirtle, D.D.S., Louisville, Ky.

Question 242. *Gentleman, aged 50; has a few bad teeth in upper jaw. In shutting mouth the remaining upper central incisor, instead of projecting a little over lower teeth, closes straight inside one-half inch. In inserting upper plate, would you build out in front, or let the teeth come down inside the lower ones as his natural teeth have done?*

Place upper incisors inside.

W. K. Eggleston.

Build out as much as possible.

J. Clark.

It all depends on the expression of the face. If building out would make the lip protrude set upper teeth as close to lower ones as possible.

W. U. Morgan.

Malposition in natural organs should not be reproduced in the artificial, providing the utility of the denture is not lessened thereby. If circumstances permit, arrange the teeth to overbite, as most teeth do.

W. A. Grove.

I would build the plate out to bite, as the natural teeth did.

J. P. Collins.

I certainly would not build out in front. If the occlusion is not too far forward, I would set the tips of the teeth just on top the lower ones. Endeavor to follow nature.

Henry Pirtle.

NITROUS-OXID ANESTHESIA.

In a paper read before the Pennsylvania State Dental Society and published in *Cosmos* for November, Dr. J. D. Thomas, of Philadelphia, discusses the question as to the effects of inhaling nitrous oxid. His experience leads him to conclude that it is an agent producing perfectly legitimate anesthetic effects as exhibited by stimulation, intoxication and unconsciousness. So far as oxygenating the blood is concerned it is practically an inert gas, there being no separation of the oxygen from the nitrogen at the temperature of the body, and if the administration is pushed far enough the asphyxial condition may be developed, but this may be counteracted by admission of oxygen or air. As the condition of anesthesia precedes that of asphyxia, the latter should never be produced, and when it is, can only be attributed to a lack of intelligent understanding of the physiological action of the gas. The dangers of administration are clearly from the production of asphyxia. In cases where the patient is anemic, very full blooded, a slow breather, or of low vitality from grip or over-work, great caution should be exercised.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Mummifying Application for Pulp Fibrils.—

R. Dried alum oz. j.
Thymol,
Glycerol.....āā. oz. j.
Zinc oxid.....q. s. to

Make stiff paste

Introduce into pulp chamber after removal of all accessible contents of canals, pricking into contents of canals by use of Donaldson bristle. *Theo. Soderberg.*

To Prevent Offensive Appearance of Cuspador—After cleansing and disinfecting, wipe the mouth of cuspador with an oiled rag to keep blood and saliva from adhering. *B., in Dominion Journal.*

Impression Material for Crown-work.—Ordinary glazier's putty, molded to proper consistency and perfumed with winter-green makes a very useful impression material for crown-work, in which fusible metal can be cast with great perfection.

W. S. Elliot.

Finishing Up Rubber Plates.—Use about one-third emery with pumice and save half the time and labor. Cover the palatal surface with oil or glycerin to remove the last traces of plaster.

Ohio Dental Journal.

Gold Inlays.—Use pure gold plate No. 36 for a matrix, burnished into the cavity, Watts' crystal gold to form the contour, with 22k. gold solder over all. Set with cement. This makes an artistic operation.

W. V. B. Ames.

Combination Filling; Cement and Aluminum.—Mix cement powder and aluminum filings equal bulk; incorporate thoroughly before adding the fluid. After it has set, burnish the surface thoroughly. This filling presents a metallic surface which will withstand attrition equal to an all-metallic filling.

W. X. Sudduth.

Antiseptic Mouth Wash.—

R. Saccharin 2.5 grs.
Alcohol absol..... 100 grs.
Tincture rhatani..... 15 grs.
Acid benzoic..... 3 grs.
Oil peppermint,
Oil cinnamon.....āā 0.5 grs.

Dilute with nine parts water.

Hold in the mouth one minute.

W. D. Miller.

Hemorrhage after Tooth Extraction.—Dip a pledget of cotton into tincture of gum benzoin, then into tannin, and place in the socket.

C. R. Yearick.

Pickle for Gold Work.—

Oxalic acid.....	½ oz.
Sulfuric acid.....	1 oz.
Water.....	6 oz.

* * *

Combination Filling Oxiphosphate and Amalgam.—Mix equal parts dry amalgam with oxiphosphate powder. Add the fluid and place in the cavity. Polish after half an hour. "It never gives out."

C. S. Straw.

Emulsion—Use in Pus Pockets, or Dilute for Mouth Wash.—

R. Alumnol.....	gr. xxx.
Resorcin	gr. xxiv.
Oil cassia.....	℥ v.
Distilled water.....	℥ ij.

Dental Review.

Tin and Gold Combination.—I have used pure tin turnings mixed with Watt's Crystal Gold, thereby getting a material that is cohesive all the way through, with which you are enabled, for contours, to build out as rapidly as in any other way.

L. J. Mitchell, Am. Den. Soc. Europe.

Dummy Crowns in Bridge-work.—Fill a hollow gold crown with cement and solder on a cap. The cement gets harder the more the bridge is heated; or fill the crown with rubber, to be vulcanized in. Cheaper and more easily done than filling in with gold solder where there are many crowns.

W. G. Browne.

Sponge Graft in Abscess Tracts.—After clearing out the sinus as best you can, pack in sterilized sponge, which acts as a perfect drainage tube for any further formation of pus, and prevents anything from getting in. As the tissues heal the sponge is absorbed.

Dr. Briggs.

Lactic Acid versus Sulfuric Acid.—Lactic acid has this superiority—that it does not act on the soft tissues except to stimulate. I use it as a solvent in pyorrhea, its effect on the soft tissue being to stimulate granulations and reunite the gum tissue with the tooth, something that sulfuric acid cannot do.

W. J. Younger.

To Correct the Fit of a Glass Stopper.—Powder an old corundum point and moisten with water. Revolve the glass stopper charged with this powder forcibly in its socket. In three minutes you will have a perfect fit.

J. P. Anderson.

Treatment of Deciduous Teeth.—Apply to an exposed pulp a pellet of cotton moistened with creasote and then dipped in powdered cocain. This will generally quiet the pain at once. After death of the pulp remove as much of it as possible, and place in the pulp chamber a pellet of cotton moistened with eucalyptol and iodoform. Fill over this with cement or gutta-percha. Then with a small drill bore through the buccal side of the tooth to the pulp chamber to allow escape of gases and prevent subsequent abscess.

M. L. Woodward.

Antiseptic Varnish for Coating Cavity Walls.—To Canada balsam add mercuric chlorid and thymol; evaporate in a water bath from 20 to 28 hours, then dissolve in chloroform. Properly prepared this makes a valuable anti-thermal protective coating.

Dr. Howard, in Ohio Dental Journal.

Combination Filling, Oxiphosphate and Alloy.—I first mix the alloy, being careful to have no excess of mercury. I then mix oxiphosphate very thin, and with a stiff spatula incorporate the amalgam very thoroughly till the mass can be rolled between the thumb and fingers, when it is quickly packed into the cavity and burnished to the margin as usual. When the cavity includes the masticating surface, the latter can be made of amalgam only. This method is especially adapted to cavities difficult of access, or so sensitive as to render thorough excavation impracticable.

L. W. Skidmore.

Broaches.—A broach for use in root canals should have square sides that silk or cotton fibers may be quickly rolled on it, loose or firm as may be required. It should have no barbs. These only weaken it. Swiss watchmaker's broaches are four-sided, highly polished, and come in all sizes, from hair-like fineness up; should have the temper drawn by heating them over an alcohol lamp or Bunsen burner in a glass tube, which protects from currents of cold air and shows the color, which should reach a deep blue. These will be found well adapted to dental uses.

S. G. Perry.

Articulation of Artificial Teeth.—Be sure that the bicuspid and first molars meet uniformly on both sides, securing perfect interlocking of the cusps of the bicuspid. See that none of the six anterior teeth touch, crowding and overlapping the lower anterior teeth if necessary.

L. P. Haskell.

Pulp Amputation.—A filling can at once be placed above a cauterized and amputated pulp which has been treated with a 30 per cent solution of formalin, provided a piece of carbonized wad-

ding, dipped in the solution, be applied to the roots of the pulp. If time permits, apply the solution during one or two days preceding the filling. After 24 hours the pulp will be gray and hard, though elastic.

Dr. Forsman.

Local Obtundent.—

R. Cocain.....	gr. $\frac{1}{2}$.
Sulfate morphia.....	gr. $\frac{1}{8}$.
Sulfate atropin.....	gr. $\frac{1}{100}$.
Steril. water.....	gtts. xxx.
Inject hypoder.....	gr. v to xv.

Above to be had in Parke, Davis & Co.'s tablets. One tablet in 25 minims sterilized water makes a 2 per cent solution. The "sterilized water" is distilled water containing eight to ten per cent listerin or euthymol.

N. S. Hoff.

Deodorizing Iodoform.—The unpleasant, persistent odor of iodoform may be entirely overcome by mixing it with a 10 per cent solution of carbolic acid, to which is added two grains of cumarina, an extract from the tonka bean, which is innoxious and without medicinal properties. A good paste without odor may be made by mixing 1 grain cumarina with a teaspoonful of collodion, and grinding up with it iodoform according to the strength desired.

J. G. Van Marter, Rome, Italy.

Amalgam in Deciduous Teeth.—For proximal cavities separate well with corundum disk, treat the surface of the cavities liberally with silver nitrate till thoroughly blackened, then excavate and fill.

L. G. Noel.

Pulp Capping (an old method).—In a large crown cavity of a first temporary molar, the pulp having been uncovered in the removal of carious dentin, cut a gold cap to fit the sides of the cavity, on which place plaster of Paris (which may be mixed with 10 of water to 1 of carbolic acid in case a slight stimulant to the pulp is wanted). This is placed, plaster down, in the cavity, and time allowed for the plaster to harden, when the cavity is filled with gold. Plaster of Paris possesses no marked irritating properties, but has perfect adaptation to the pulp and protects from changes of temperature.

G. V. Black, in 1870.

To Toughen Plaster Casts.—Plaster casts may be made so tough that they will bear the driving of a nail into them without cracking, by immersing them in a hot solution of glue for a sufficient time to permit its permeating the entire mass.

Scientific American.

Alumnol is useful as a styptic about the end of a root, in setting a crown.

Dental Review.

ITEMS.

A law was passed May 4th, 1895, by Guatemala, that no foreigner should practice dentistry or medicine without first passing an examination, and that in Spanish. *Luella Cool.*

* * *

Our influence is immortal. It is the immortal part of us. Our deeds, our thoughts, live on forever and forever. Each propagates after its own kind. *Rev. Carlos Hartyn, Chicago, Ill.*

* * *

Instead of paraffin which scales off as soon as wet, melt together rosin and wax on a spatula, and pour on cement filling after it has stood a few minutes. After a day or two it will take a polish almost like ivory. *E. T. Darby.*

* * *

Dr. A. D. Adair does not think it justifiable to destroy a live nerve without first making the attempt to save it by capping. It may die, but the tooth is no worse off than if he had killed it, and you have at least given it a chance of living. *Ohio Journal.*

* * *

A mixture of chloroform (ten parts), ether (fifteen parts), and menthol (one part), used as a spray, is recommended as an excellent and prompt means for obtaining local anesthesia, lasting for about five minutes. *Boston Med. and Surg. Journal.*

* * *

I would advise never to put wet borax on hot teeth, as it is liable to crack the teeth. I greatly disapprove of the too general use of cross-pins by dentists. In my practice I use the so-called straight pins, except in some special cases of bridge-work, as I believe they are much stronger and less liable to break. In choosing artificial teeth, select bicuspid and molars with the long lingual cusps. For clasp metal I use gold alloyed with platinum, 16 to 1, or a pennyweight of platinum to an ounce of gold.

L. P. Haskell.

* * *

In swaging any metal I always oil my dies to prevent, as far as possible, the baser metals adhering to the plate, and before annealing wipe off all trace of the baser metals. After annealing and partial swaging, wash the plates in sulfuric acid and boil them so as to peel off the base metals. I prefer the use of cotton-seed oil for mixing modeling sand, to that of water, the steam from which causes the formation of air bubbles in the metal cast.

L. P. Haskell.

EDITORIAL.

THE IMPORTANCE OF FAITH.

Is there such a thing as looking for the unexpected? Can we be anxious for what we believe impossible? In other words, can we arouse in ourselves enthusiasm without faith? For "faith is the substance of things hoped for." It is thus the penetrating vision of our inner self becomes "the evidence of things not seen."

I pity the man that has not his second sight, for there is much more to be seen by this wonderful hidden power than by the eye that only sees the physical.

O, yes; I pity the man that cannot see farther than his nose; for unless we have eyes far better and keener than the eyes of our body we cannot see very far or enjoy very much. There are far richer things beyond than within our common sight; and seeing these things beyond is to possess them by faith, and to enjoy them, and to master them, as a strong man masters his environments, and then pushes out beyond them to become bigger and brighter and greater by an indomitable perseverance that conquers impossibilities.

Some men live all their days on a gold mine and do not know it. They work to exhaustion in squalor and poverty, and unconsciously lie down on a pillow of gold.

Three generations of the Jones' brought their water from down a long, steep hill, yet at their very door was a solid vein of silver waiting to be discovered. When the grandson went down thirty feet for water he found both water and wealth.

The very hoofs of his sheep showed Clarkson a lead of lead in their beaten path on the hill side of his ranch; but, "O, pshaw, that's nothing," said his physical eyes, and years afterward he sold his ranch to a stranger for a song. As this man drove the sheep over the hill path, and stumbled over the same impediment, he saw it by his eyes of faith and cried out, "Eureka! I have found it." And sure enough, it was not only a lead of lead but

lead so rich in silver that his ranch was soon turned into a city and he into a millionaire.

Sometimes we not only see apparent trifles that should awaken faith and enthusiasm, and the utmost energy. We *know* of exhaustless wealth within our reach but have not the courage of our convictions and the enterprise to appropriate it. We have not the faith that would climb over the obstacles that oppose us to the treasure just beyond. I know a whole community that have known for generations that a vast salt bed of great purity lay under their soil, but knowing it made them no richer. It was eighteen hundred feet below them. Who would go down that distance for it? Yet they tried to induce strangers to do so. A stranger did try it and made his fortune. And even then these sleepy people took no hint. They still moped on as they had moped for so many years.

O, for faith to grasp the hidden;
O, for fire to burn our rubbish;
O, for eyes to walk as bidden,
Our life work to establish.

Narrow-mindedness generally generates jealousy; and a jealous disposition is usually selfish and blind to its own faults and others virtues. Look at this from a business standpoint. A broad-minded, generous, active dentist is seldom jealous. It is the lazy, addle-headed, and, therefore, neglected dentist that thinks everybody is stepping on his toes. Of course the successful dentist, in actions, says, "get out of my way," and doubts if such good-for-nothing fellows have any place in the profession. But this is the fault of these jealous sleepy-heads. That they are in the way is a notorious and vexatious fact, and that they have no place among honorable men is seen in the way they are kicked about and neglected. No one wants anything to do with them. They are a nuisance and a hindrance to progress.

The arena of life is large enough for the brave; the confusion and strife of ordinary workmen are fun for the skilful; the rules of contention are exhilarating to the successful. These love

competition, they invite rivalry, they are in their element where only the best win.

Away, then, with your jealous narrow-mindedness and chronic grumbling. Take off your green goggles and come to the front. Challenge competition by doing good work, look cheerfully on neighbors by being in the lead, hail the warfare of life by a consciousness of inward strength.

DENTAL LICENSES IN ONE STATE GOOD IN ANOTHER.

The new Dental Law of New Jersey has inaugurated an example worthy of imitation, for it recognizes dental licenses in other States. If other States will reciprocate this will bring about a great and just improvement in our dental laws. It reads thus:

“The board may also, without the examination heretofore provided for, issue its license to any applicant therefor who shall furnish proof satisfactory to it that he has been duly licensed, after examination, to practice dentistry in any State or country after full compliance with the requirements of its dental laws, and has been lawfully and reputably engaged in said practice for five years next preceding his application; provided, however, that his professional education shall not be less than that required in this State; every license so issued shall state on its face the grounds on which it is granted, and the applicant may be required to furnish his proof on affidavit.”

Watchman, what of the night? For these sleeping ones is there no dawn of the morning? Blow ye the trumpet! Shout out again the morning call! The leaders have gone forth, where are the laborers? O, the sleeping multitude! Think they not of the golden grain waiting for the gathering! Awake, arise, ye slumberers, and away to your work! Turn no longer to the wall,

muttering, "a little more sleep, a little more slumber, a little more folding of the hands to sleep."

Yes, most of the world is asleep, and the energetic few have to support them in their slumbers. Most are servants who work from necessity; there are few masters who spring at their work from the love of it; but these enthusiasts win. The multitude drag their slow length along as though life was a burden and work a curse. Only a few know the life of bounding spirits, of exhilarating inspiration and of satisfying success. O, that an electric shock could arouse this listless, moping throng! Ye mighty thunders roll out peal after peal to shake them from their lethargy. In their dreams they moan and mutter and sigh, as in imagination they feel their wrongs and their hard lot. Open their eyes to see that honest work brings the exhilaration of normal growth, the maturity of strength and skill, and the luxury of a rich harvest.

GOING IN DEBT.

Dunning bills! Dunning bills! What a shame. And there is all manner of excuses for this going in debt. And it is not confined to our poor dentists. It seems sometimes that the more practice the more inclined the practitioner is to go in debt. With the inflow of a good practice comes all manner of imaginary wants and artificial appetites; therefore in spite of a large income dunning bills are presented that we cannot pay. And we become so hardened to their presentation that we flippantly dismiss them with a promise—a promise too often made to be broken, and broken so often as to finally seem to us as a venial thing.

These things ought not so to be. It is said there is honor among thieves; there certainly should be among dentists. We should not so justly have the name of unreliable spendthrifts and dishonorable debtors if we were more strictly governed by the golden rule. When in a large city the other day we were surprised to learn of the poor financial standing of a majority of some of the most skilful and most popular dentists there; men with a practice of from five to ten hundred dollars a month were said to have but

a paltry sum to show in bank ; all gone, and much of it spent unnecessarily and foolishly. "We must keep up appearances," and all that foolish nonsense is a popular excuse ; an artificial life is thus established that is a curse to both character and purse.

Most of our small dentists are equally at fault. Many of these say, "If I could get such a practice as you are talking about I would show more sense." How much more sense are you showing with the income you have? The only difference is they waste their thousands and you your hundreds. The bootblack says if he could have your income he would get rich, but in his sphere he acts as foolishly as you in your sphere, for out of the pittance of his income he considers the cigaret and other "luxuries" such essentials he spends his last penny for indulgence.

Thus from the lowest to the highest there are plenty of excuses to live above our means, and therefore plenty of excuses to run in debt and be forever with our nose to the grindstone.

It is foolish ; it is unnecessary ; it is a curse to any man, be he rich or poor, professional or layman. We would not say there is never a good excuse for being in debt, but happy is that man who pays as he goes.

LET YOUR INDIVIDUALITY BE DISTINCTIVE.

John Wanamaker, of Philadelphia, when a young man, looking about him saw nearly all business men doing business in about the same way. "How can I do business," he soliloquized, "so as to stand out prominently for something distinctive? How can I make this distinctive feature attractive? If I can serve the public so as to please them they will serve me." What is the result? He is a giant among business men.

Steven Merit, the New York undertaker, said to himself when a young man, "I will be *the* undertaker of New York by being distinct in my calling." At first he was called eccentric, and yet he was so pleasantly eccentric that people liked him. To his eccentricity he added estheticism. He was the pink of neatness, cleanliness, propriety, and polite attention ; but not only this, he

was always sympathetic ; no wonder he is now known as the most popular and successful undertaker in America.

We must thus carry our individuality with us into our business. Imitators of others generally fail ; and, of course, we shall also be likely to fail if our peculiarities of individuality are distasteful. We have no right to be ill-bred, crotchety and offensive. People will pay us nothing for these, but they will pay us well for distinctive individuality in all good qualities.

It will not do for those who are not successful in bridge-work to decry it as "impractical, unreliable and filthy." Much is so ; and this is true of sets and part sets of artificial teeth of all modes of structure. But this is not a good reason for condemning all. There are those who succeed admirably in all prosthetics ; and there are those who fail, though they may be good in general chair work. Let those who fail take lessons of those who succeed, instead of discounting everything beyond their own present attainments.

HARRIS' PRINCIPLES AND PRACTICE OF DENTISTRY. Thirteenth edition. P. Blakison, Son & Co., Philadelphia.

It seems singular that this work has already attained its thirteenth edition. But this is not only because it is the popular standard work for students and dentists, but because dentistry itself is advancing so rapidly that an edition is hardly on the market before Dr. Gorgas, its editor, has to be preparing matter to represent new thoughts and processes. This edition contains 1,180 pages, and we observe a large number of pages have been entirely rewritten. If we could not detect this in any other way, we could discover it by the spelling, so rapidly has our orthography changed during the last twenty-five years. How, for instance, would Dr. Harris have laughed to see such spellings as these in his book : chlorid, glycerin, gage, gild, gram, catalog, mold, oxid, esophagus, bromin, bromid, sulfur, iodin, iodid, cocain, hydrid, quinin, sulfid, dram, mold, etc.

NOTICES.

The ninth annual meeting of the Washington State Dental Society will be held at Tacoma, May 18th, 19th and 20th.

Robert Bruce Gentle, Secretary.

* * *

The annual meeting of the Georgia State Dental Society will be held at Warm Springs, June 9th to 12th next. All dentists in good standing most cordially invited to attend. For further particulars apply to *O. H. McDonald, Cor. Sec., Atlanta, Ga.*

* * *

The South Dakota State Dental Society will meet at Sioux Falls, S. D., on the first Wednesday in June.

The State Board of Examiners will also meet at the same time and place.

* * *

The next meeting of the California State Dental Association will be held at Santa Cruz, commencing on the second Tuesday in June. We are always very happy to entertain members from abroad, and hope on this occasion there will be a large number of members and visitors to enjoy this delightful retreat.

* * *

The twenty-ninth annual meeting of the Tennessee Dental Association will be held in Nashville, beginning on the first Tuesday, the 5th day of May, and continuing three or more days. All reputable registered dentists are requested to attend.

The following are the present officers of the Association : Drs. B. D. Brabson, President, Knoxville ; R. B. Lees, First Vice-President, Nashville ; J. M. Mellen, Second Vice-President, Dyersburg ; P. D. Houston, Recording Secretary, Lewisburg ; W. H. Richards, Corresponding Secretary, Knoxville ; H. E. Beach, Treasurer, Clarksville. The Executive Committee are Drs. J. Y. Crawford, D. R. Stubblefield and J. A. Dale, all of Nashville.

P. D. Houston, Secretary.

* * *

The Executive Committee of the Southern Dental Association has decided to change the place of meeting which was to have been held in Nashville, Tennessee, in November, to Lookout Mountain, Tuesday, July 28th, 1896.

This meeting will immediately precede the "American," thereby enabling members to attend both associations.

S. W. Foster, Rec. Sec.

HINTS.

Dr. S. B. Hartman, of Fort Wayne, recently gave a short lecture to the children of the city schools on the nature and care of the teeth. This is a good example for other dentists to follow.

* * *

Dr. John S. Thompson cuts a paper cap from that part of an envelope which is gummed, the United States Government using only a pure antiseptic dextrin paste. He moistens the cap on the lip or tongue of the patient and applies to the point of exposure.

* * *

Dr. S. C. G. Watkins after cleansing the cavity, lays a pledget of cotton saturated with creasote over the exposed pulp. This gives all the antiseptic effect of creasote, but does not coagulate the surface of the pulp or leave scar tissue. Removing the cotton a cap of asbestos is gently placed over the pulp exposure and thin cement flowed over it.

* * *

Have we not often found that men of few words give us thoughts more acceptably and more clearly than those do who have great volubility? The latter deluge us with a perfect shower of words, that quickly bring down on us a flood-wood of confusion without any thing we can appropriate; while the former, in a few words give us well selected and valuable thoughts, sharp, well defined, practical and useful, all as good and as beautiful and rich as gold.

* * *

Some dentists, like some ministers, give good advice but spoil it in the giving. The acceptability of our advice is greatly modified by the mode, manner and spirit with which it is given. A spirit of superiority, or of ostentation, or of selfishness, or of any sinister motive, weakens the best advice. Affability, kindness and evidence of disinterestedness give force to even unpleasant advice, though couched in homely and stammering words. Then, too, tact in reading character, and in choosing the proper time and circumstances are essential. Often, what will be received by one, and wisely acted on in an opportune time, will be spurned by another, or when given under different circumstances.

Dr. Louis Jack calls attention to the overwhelming increase of plastic filling materials, many of which are very indifferent, but through extensive advertisement are praised into too wide an acceptance. The use of them raises the serious question, in view of the fact that most of the fillings are of short duration, whether dentistry as an art and our standing as a profession are not in danger of suffering a serious decline, and whether American dentistry is not falling into the conditions of practice which greatly prevail in Europe.

* * *

A HINT ON ARTICULATION.—It is often very difficult to make a full upper denture work satisfactorily when the patient has only the four or six lower anterior teeth. If only the upper set is to be supplied, in adapting the teeth to conform to the lower teeth, leave room for the lower teeth to pass inside of them without touching, thus preventing tipping at the back. Have the lower teeth bite on a shoulder of rubber built on the upper plate, from the pins of the teeth back about one-eighth of an inch. When the vulcanite is thus used for a masticating surface, use only the finest rubbers.

* * *

Trying to avoid offensive habits, trying to be agreeable, trying to be a gentleman, is generally of little use. The very quality must be in you. It must be the habit of your life, the spontaneous outgrowth of your thoughts, a part of your very nature. Then all is easy. You don't have to try. Good manners, a pleasant bearing, an esthetic taste, comes with the breath, is seen in the smile, is recognized in your voice, your movements, your atmosphere.

* * *

Do not act too much on the opinion or practice of others. Seek knowledge and skill from all sources, but in applying both depend much on your own common sense and experience. Wisdom is knowledge digested, and nothing less than wisdom converted into skill at your very finger-ends will make you a successful dentist. You may commit formulas to memory and imitate to perfection the manipulations of others, and yet you will lack the one thing needful—cultivated brains and muscles—to discriminate and apply. Improve your practice by every new appliance and every new idea within your reach, and go often outside of your home to find them, but after all, be yourself ; improve yourself constantly, or you will not be able to improve by the ideas or measures of others.

TOO LATE.—Why is it we so seldom recognize the value or beauty of nature in a friend or acquaintance till death has shut the door between us? Does it require the hush or darkness of night to bring out the perfume of the flower? The generous praise we lay on his grave may ease our self-reproach, but he has passed beyond its need; him it can neither soothe, nor comfort, nor cheer. Yet half, or less than half, of the appreciation of his virtues, of the recognition of his struggles we yield him dead—if given while he lived, might have helped him while he toiled and knew defeat and disappointment!

* * *

Do you know you can drive nails into hard wood without bending them, if you dip them first into lard?

That corks warmed in oil make excellent substitutes for glass stoppers?

That a lump of camphor in your clothes-press will keep steel ornaments from tarnishing?

That bread crumbs cleanse silk gowns?

That milk, applied once a week with a soft cloth, freshens and preserves boots and shoes?

That gloves can be cleansed at home by rubbing with gasoline?

* * *

Often the most dogmatic are the most ignorant. The flippant young scholar, just from his teacher and his books, thinks it an evidence of indecision and limited information to hear "old folks" hesitate, and pronounce their opinions in measured caution. These newly-fledged professionals can recite their piece with all the air of a philosopher. As they grow older they will know less; or at least they will see more of their own ignorance. If most of us thought more and talked less, and declared our opinions with more modesty and moderation, it would show greater wisdom; and wisdom itself needs much practical application to convert it into skill and financial success.

* * *

"GAS" FROM THE MAIN.—A medical man was rung up about 1 A. M. by a man who complained of toothache, and wished to have chloroform administered. The doctor explained that without proper preparation and assistance this was out of the question. Then the patient demanded gas, and was informed that he was talking not to a dentist but to a medical man, who did not keep the necessary appliances in his house. "Gas," said the patient, "have you not a meter?"

British Dental Journal

The wife of James Lambert, a milkman, has been a great sufferer from toothache for a long time. She told her husband he must procure something to relieve her. He came to town and bought a toothache remedy, warranted to give instant relief, and on his return home Mrs. Lambert applied the remedy, but it seemed to make the pain more severe.

While bathing her gums some of the liquid was poured into one of her hands, which she put up to her face. The medicine attacked the flesh, causing intense pain. A physician extracted the teeth and applied soothing lotions to the burned face, but Mrs. Lambert will be disfigured for life. Her face looks as if a red-hot branding iron had been applied.

The New York *Medical Record* ^{* * *} refers to the fact that Dr. Snow, to whom Great Britain owes its first immunity from epidemic cholera for the last twenty-five years, and, of course, for all future time, is almost forgotten in that country. In commenting on this fact Sir Richard Quain recently said: "Dr. Snow made us masters of the deadly plague of cholera. He thereby saved millions of lives. The sole reward which England has conferred on him is midnight obscurity. If he had been a soldier," he continued, "instead of a doctor; if he had slain his thousands instead of saving his millions, every town would have hailed him as a hero, and the nation would have honored his memory with monuments more enduring than brass." Dr. Snow's work consisted in discovering that cholera is a water-born disease.

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A curious case has just been recorded in which an electric current was found to be generated by a plate of artificial teeth. A patient consulted his doctor on account of a severe pain in his tongue. But the sufferer was assured that there was nothing the matter. He then paid a visit to his dentist, who informed him that his teeth were perfectly sound. Being, however, dissatisfied, he called on an electrician whom he knew, and asked him if it were possible that he could have any electricity in his mouth. On examining the teeth, his friend found that two metals were used to fit them to a composition plate. To these metals wire were then attached and connected to a galvanometer. Then the teeth were replaced in the patient's mouth, and the metals moistened with saliva. No sooner was this done than the galvanometer showed quite a large current from so small a source—enough, it is stated, to cause severe pain when long continued on so sensitive an organ as the tongue. The plate was covered with an insulating varnish, and thenceforward all the trouble ceased.

FOR OUR PATIENTS.

We meet and mingle, we mark men's speech;
We judge by a guess, by a fancied slight;
We give our fellows a mere glance each,
Then brand them forever black or white.
Meanwhile God's patience is o'er all;
He probes for motives, He waits for years;
To Him no moment is mean or small,
And His scales are turned by the weight of tears.

Could we with ink the ocean fill,
Were the whole earth a parchment made,
Were every single stick a quill,
And every man a scribe by trade;
To write the love of God to man,
Would drain that ocean dry,
Nor would the scroll contain the whole,
Though stretched from sky to sky.

[The following may amuse some of our young folks who know little of the queer pranks said to be witnessed during the introduction of gas as an anesthetic.—ED. ITEMS.]

TRUTH OR FICTION?

Dr. C. C. Dills.

On the 23d of June, 1867, I had an experience wholly unique. About twenty young men of my native town, of Piqua, Ohio, chartered a small packet of Capt. Jones to go fishing at the Laramie's Reservoir, 25 miles north, and I was taken along to afford laughing-gas entertainment with the nitrous oxid that I had just introduced into my dental practice.

Our boat was provided with the usual facilities for being closed during storms and north winds, which would sometimes seem to empty half the reservoir into the canal, playing temporary havoc with all concerned.

Though under deck, we had noticed some evidence of storm, yet paid little attention to it. But, shortly after passing through a lock, about fifteen miles up, and just as I had my gas made and arranged for the anticipated pleasure, consternation seized us. There was a terrible roar and rumbling, and a bounding inside among the crew, who hastily closed the hatchways after them. In a moment more we were conscious of the boat being struck by a

body of water and driven back with great velocity, till stopped with a thud that threw everybody and everything topsy-turvy.

Captain Jones said at once that we had struck the lock, and tried to compose the party. But when a moment later our cabin became perfectly dark, and all was still save a trickling of water from a crack over head, the captain's voice betrayed a tremor, in ordering the lights to be struck. The lights showed him to be deathly pale. Instantly he exclaimed: "Great God! boys, we have lodged under a big beam of the lock and are as completely submerged as if we were at the bottom of the sea! We are lost! and, O my God! I am doubly lost! We will all suffocate here for want of oxygen."

Our feelings cannot be described, as we witnessed the thorough fright of Captain Jones, who was a noted infidel and typical rough boat captain of that day. He continued his ejaculations of, "Pray, boys, pray—and pray for me!" I never saw a man try to pray for himself as he did then.

But I was entertaining a hope little dreamed of by the others. My nitrous oxid! Had I not proclaimed its life-supporting properties? Here then was to be my opportunity to save us all, if my claims were correct, and my supply of gas held out till Providence might come to our relief.

While relegating the praying to others, I devoted myself to preparations for the emergency sure to come. And it came. The mild yet deadly carbonic acid gas was getting in its work, and one by one was succumbing to drowsiness.

I had privately tested my proposed antidote, and, feeling none of the prevailing stupor, was encouraged. Yet the venture was to be a trying one, in view of possible contingencies. My greatest concern was to determine the amount of gas required. My past experience had been with the amount necessary to produce exhilaration only, and with a single person, in a normal condition; I had also had the aid of a convenient rubber bag; but here were twenty dying persons, and the cabin was to be my only gage. If, in the necessity for enough gas to revive, I let on too much, I might not only become disconcerted myself, but be dislodged from my important position by others still more affected. I knew from my habit of taking the gas, that I could withstand its effects long after others might be overcome.

With the remembrance now of my feelings at that critical moment, when, with my hand on the gas valve I was awaiting the proper time to act, I think I have an appreciative sympathy for that engineer who, during one of the summer's forest fires, with

his hand on the throttle valve, was awaiting the proper moment to plunge with his train into death, or possible life.

The expectant moment arrived, when I could debate my position no longer. With tremor, I turned on the gas slowly. But the cabin was too large for what I deemed quick enough results, and, in my anxiety, I perhaps turned on more than was necessary.

The result was indeed a speedy revival—but O ! the wierdness of that scene of boisterous hilarity, in contrast with what had just preceded.

There was also plenty of the ludicrous, if I had been in a position to appreciate it. I can look back now on that medley of serio-comic acting with real laughter—"laughter coming after"—at the many predicaments incident to the concentration of intense diversities, singing, shouting, dancing, declaiming, etc., etc. One may come nearer imagining the uniqueness of my position, by considering that a single person under the gas entertains an entire audience, by the increased activity and brilliancy the gas imparts; but here were twenty such persons, and I the only auditor.

Thus our cabin became as near a pandemonium as is possible with human beings. Even the New York Stock Exchange affords no comparison in intensity, nor a public reception of a politician by his henchmen in boisterousness. It was only after reducing the amount of gas let on that I at last became able to distinguish individual actions.

Though each one of my twenty abnormally brilliant patients was intensely interesting, my attention became specially riveted on Captain Jones. Here, withal, was the original and only real Dr. Jekyll and Mr. Hyde, in the perfect transformation of the captain, from the prostrate, penitent, praying man of but a moment ago, into a most defiant scoffer. The captain would laugh, and they all kept up their antics, till I saw a light creeping in at an upper window, by which I knew the water had subsided below our deck, and I hastily threw open the hatchways. All were saved !

Of course our exploit became the talk of the town, and I decided to make the most of it, by introducing the gas as an auxiliary to my regular practice.

"Father," said a chubby girl of ten years, as they were coming to town from their isolated prairie home, "look ; there is a boy on fire." True enough, there was issuing from his mouth fire and a cloud of smoke. It was the first time she had seen a fool on fire.

ROYAL TEETH.

It is hardly a pleasant omen for England's future king, the baby Prince Edward of York, that the first appointment officially made to the household of his royal highness should be a dentist. Yet such is the case. The little fellow is having a good deal of trouble with his teething, and accordingly one of the latest issues of *The Government Gazette* announces the appointment of a clever young dentist as "dental surgeon in ordinary to his royal highness, Prince Edward of York." In course of time he will be provided, through the columns of the official gazette, with a governor, a controller, equerries lords and gentlemen in waiting, grooms of the stole, and chaplains, besides physicians and private secretaries. But the dignitary whose appointment will outstrip all others in priority, if not in importance and rank, is that of the young dentist. Teeth are becoming more and more an important consideration in the reigning families of Europe. Thus the royal house of Sweden keeps a dentist busy all the time, owing to the fact of all their teeth being bad, while the molars of the reigning house of Spain are excruciatingly bad. Don Carlos in particular having been a perfect martyr with his teeth till he had them replaced by artificial grinders. In fact, there is not a single royal house in Europe that can boast of good teeth, and for this reason dentists play so important a rôle in their existence that it is difficult to realize that a century ago even royal teeth were attended to by barbers.

Chicago Record.

NEW METHOD OF DECORATING GLASS.—Advantage has been taken by M. Margot, a Frenchman, of the singular fact that aluminum, zinc, and magnesium, when fused, will adhere to glass, in order to introduce a new and unique style of decoration, namely, glass coated with these metals. The pure metals, it is found, require a very high temperature to melt them, for instance, 1,112 degrees F., in the case of aluminum, but M. Margot has found that alloys of the metals possess the same property. An alloy of ninety parts tin and ten parts of aluminum melts at 662 degrees F., while an alloy of ninety-five parts tin and five parts of zinc melts at 492 degrees F., both of these alloys having a fine, untarnishable lustre; moreover, one can actually solder glass with them, as easily as two metals are soldered, by warming in an oven the two surfaces and applying with the ordinary iron.